LG

Colour TVCR

ADJUSTMENT INSTRUCTIONS

Notes;

(Adjustments must be performed by the following procedures)

1. It is recommended that an isolation transformer be used when servicing this chassis to prevent electric shock and damage to test equipment.
2. The ac line voltage must be maintained at 230 vac, +- 10%, 50/60 hz.
3. Prior to making any adjustments, the receiver must be operated for 10 minutes.

1. DECK ADJUSTMENT

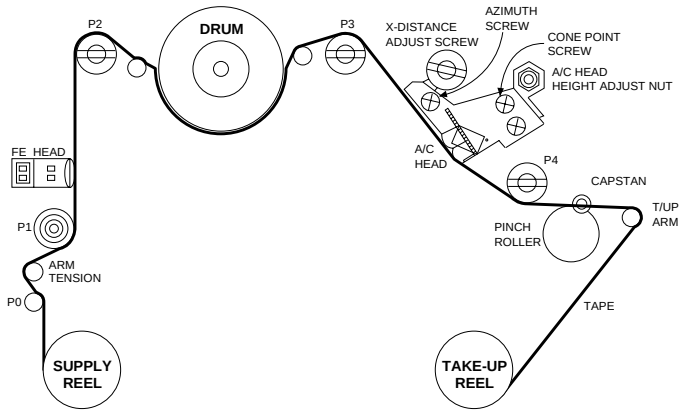
1. Deck Transit System Adjustment

1-1. Necessary Instruments

1) TAPE for SP
2) Oscilloscope
3) 10:1 Probes 2EA
4) Adjustment Driver
   (P2, P3, X-distance (NUT), Audio (NUT) control)
5) RMS Meter (Audio Level Meter)

1-2.Preliminary Steps

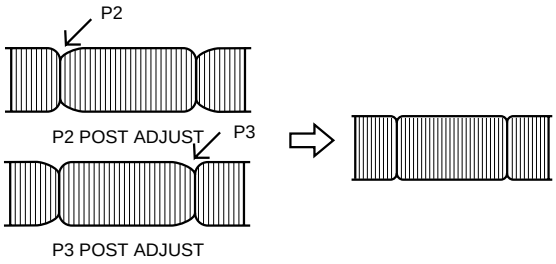
1) Connect CH 1 of the oscilloscope to J123 (H/SW) on the main PCB. Trigger on this channel.
2) Connect CH 2 of the oscilloscope to J158 (RF) on the main PCB. Monitor this waveform when preceding with step 4.
3) Play an alignment tape.
4) When the "auto Trk" caption appears on screen, press the TRK up (+) button on the RCU to initialize the manual tracking feature.
5) If manual tracking differs from auto tracking, precede with steps 1-3 (RF Linearity) and 1-4 (X-Distance Adj.).



<Adjust Parts Location>

1-3. RF linearity check and adjustment

1) Adjust P2 & P3 so that the RF ENVELOPE waveform is maximum and stabilized .
2) Check if the ENVELOPE waveform is at its maximum size by pressing TRK UP(+) and DOWN(-) button one step.



<Adjustment waveform>

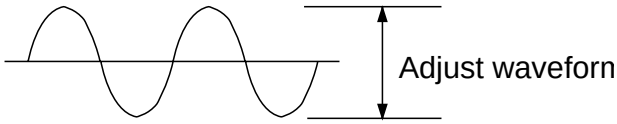
1-4. X-Distance Adjustment

1) Turn the Cone Screw of the DECK left or right so that th RF waveform is maximum.
2) Check if the RF waveform satisfies the linearity b pressing TRK UP(+) and DOWN(-) button one step.

   CAUTION: If the RF waveform becomes maximum wit the Cone Screw more than 2 turns, its out of adjustment. (2 turns; 720°)

1-5. Audio Level Check and Adjustment

1) Connect "+" terminal of RMS Meter (Audio Level Mete to J108 on MAIN PCB AUDIO OUT and "-" terminal to GNI respectively.
2) Play the 1khz and 7khz segments on the alignment tap and confirm if the spec is meet in item #3. If not adjus the azimuth screw to meet this spec.
3) Audio Level Spec: 1KHz ; 0.5 ± 0.1Vrms
   6KHz ; 1K ± 1.5dB



<Adjustment Waveform>

2. CIRCUIT ADJUSTMENT

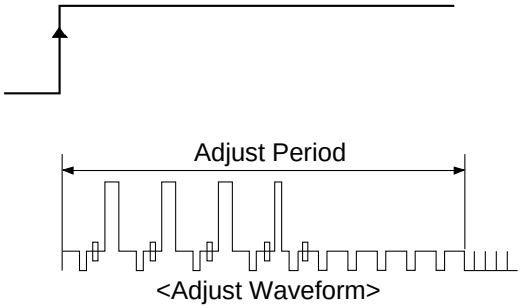
1. PG Adjustment

1-1. Necessary Instruments

1) Alignment tape SP
2) Oscilloscope
3) 10 : 1 Probe

1-2.Adjustment

1) PLAY exclusive use of SP tape. (2HD: NORMAL TAPE)
2) Connect CH 1 of the Oscilloscope to J123 (H/SW) on th MAIN PCB and VOL/DIV to 1V Range and Trigger th Oscilloscope.
3) Connect CH 2 of the oscilloscope to J241 (Video Out) c the main PCB and set the VOL/DIV to 500mV Range.
4) Set TIME/DIV of oscilloscope to 50 μs Range.
5) Adjust VR01 so that V-sync Falling Edge of Video signal become 412 μsec±20μsec.



<Adjust Waveform>

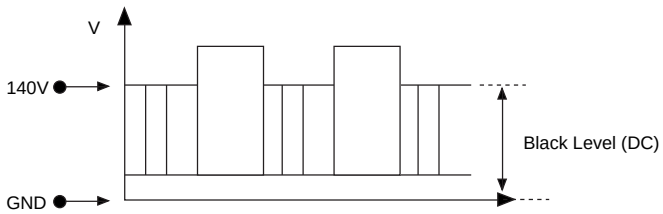
* **CAUTION:** Set the trigger mode of Oscilloscope to DC.

3. Focus Voltage Adjustment

1) Receive the cross hatch pattern.
2) Press the PICTURE button to set the Standard ON condition.
3) Adjust Focus control knob so that the focus of center & circumference to be best.

4. Screen Adjustment

1) Receive PAL DIGITAL PATTERN.
2) Select channel 0.
3) Connect the probe of oscilloscope to the RK of CPT PCB.
4) Adjust screen volume of FBT so that the waveform is the same as below figure.



※ How to get into SVC mode when you don't have SVC Remote Controller.
Push the "OK" Key on the user's Remote Controller and local "OK" button at the same time.

5. SIF Adjustment

1) Receive PAL DIGITAL PATTERN.
2) Connect the DMM to pin 5 of IC100 (SIF TP).
3) Adjust L107 to be DC 2.3±0.05V.

6. RF AGC Adjustment

1) Input PAL DIGITAL PATTERN.
2) Connect DMM to AGC(J184) test point on the Main PCB.
3) Press SVC Key on the Service Remote Controller to get into SVC mode and press PR +/- Key to select AGC.
4) Press VOL +/- Key until DMM reads the data on the table below.

MODEL	KL/KF/KE	KI
Electric fields strength	65dBu ± 0.2dBu	65dBu ±0.2dBu
AGC Voltage	2.3 ± 0.1Vdc	2.1±0.1Vdc

7. White Balance Adjustment

1) Input a signal which lower half is black and upper half white.
2) Set the picture at standard on.
3) Press SVC Key on the Service Remote Controller to ge into Service mode.
4) Press PR +/- Key to select BG, RG.
Press VOL +/- Key until X=281±3, Y=288±3.

※ GG is fixed data at 32 so, do not adjust GG data.

8 Deflection Data Adjustment

1) Input PAL Digital Pattern.
2) Press SVC Key on the Service Remote Controller an select LINE SERVICE 2 mode.
3) Press PR +/- Key to select an adjustment mode.
4) Press VOL +/- Key to adjust data.

5) Vertical SLOPE adjustment
a. Select V-SLP mode with PR +/- Key.
b. Press VOL +/- Key until the horizontal center line of th large circle coincides with Blanking Line.

6) Vertical amplitude adjustment
a. Select V-AMP mode with PR +/- Key.
b. Press VOL +/- Key until the upper and lower end of th large circle reach 5 mm inside from the effective are of CPT.

7) Vertical Shift Adjustment
a. Select V-SFT mode with PR +/- Key.
b. Press VOL +/- Key until the horizontal center coincide with the vertical sign slot mark of CPT.

8) Horizontal Shift Adjustment
a. Select H-SFT mode with PR +/- Key.
b. Press VOL +/- Key until the vertical center coincide with the horizontal sign slot mark of CPT.

9) Vertical S-Correction Adjustment
a. Select S-COL mode with PR +/- Key.
b. Press VOL +/- Key until the grid of Cross Hatch Patter is even all over the screen.

MV-995A MAIN2 SCHEMATIC DIAGRAM

P/No. : 3854VA0060A
Date : 1999.7.15

NOTICE
Since this is a basic schematic diagram, The value of components and some partical connection aresubject to change for improvement.

The components marked ⚠ conform to VDE or IEC guidelines and are essential for safe operation of the set. while those marked ⚠ are required for correct operation. Use specified parts only when replacing.

VALUE OF RESISTER, CAPACITOR AND INDUCTOR

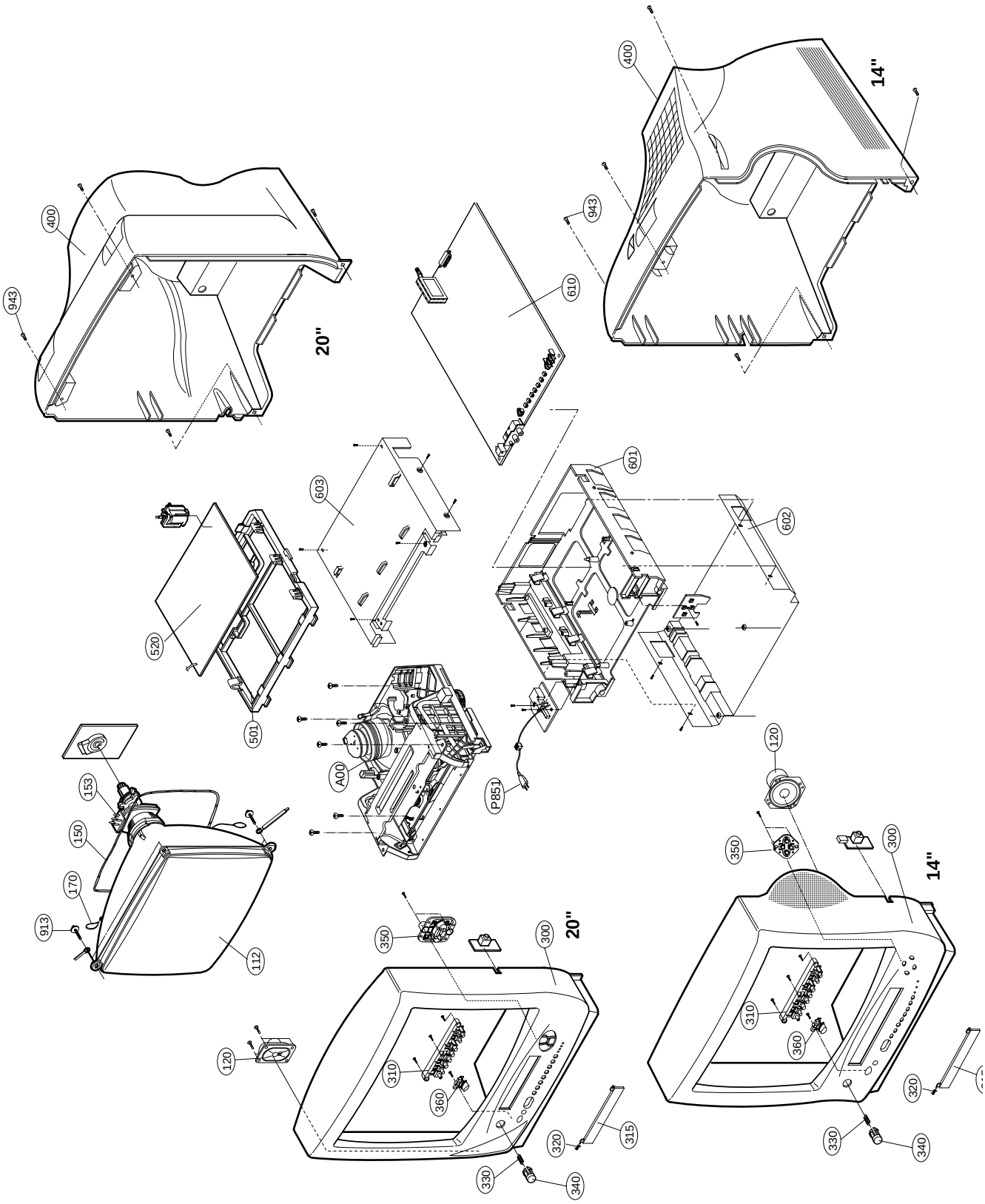
1. Resistances are shown in ohm, K = 1,000 M = 1,000,000 .
2. Unless otherwise noted in schematic, all capacitor values less than 1 are expresses in mfd and the values more than 1 in pF
3. Unless otherwise noted in schematic, all coil values more than 1 are expressed in uH, and the values less than 1 in H.

OBSERVATION OF VOLTAGES AND WAVEFORMS

1. Voltages read with VTVM from point shown to chassis ground, line voltages 220 Volts, colour bar signal
2. Voltages reading may very ±20%.
3. The schematic shown is representative only.
4. All waveforms are taken using a wide band oscilloscope and a low capacity probe.
5. Check FINE TUNING, AGC, BRIGHTNESS, CONTRAST and COLOUR controls for best picture, make sure that CONTRAST and COLOUR controls are in mid position and BRIGHTNESS controls is almost in maximum position.
6. Waveforms are takrn using a standard colour bar signal.

Audio Out
Vertical Out
H-Out

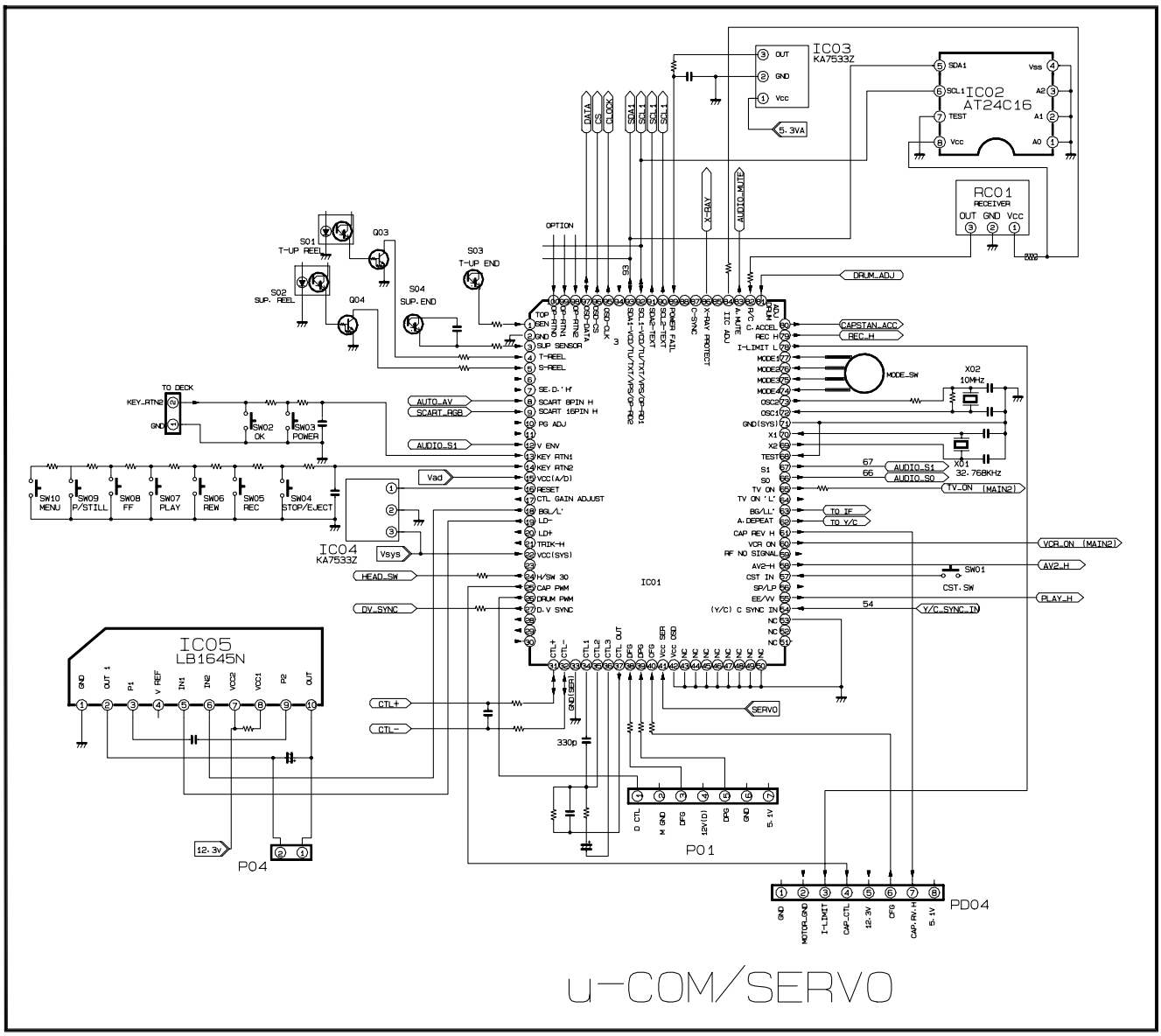
EXPLODED VIEW:KE/KL-14/20U73/X



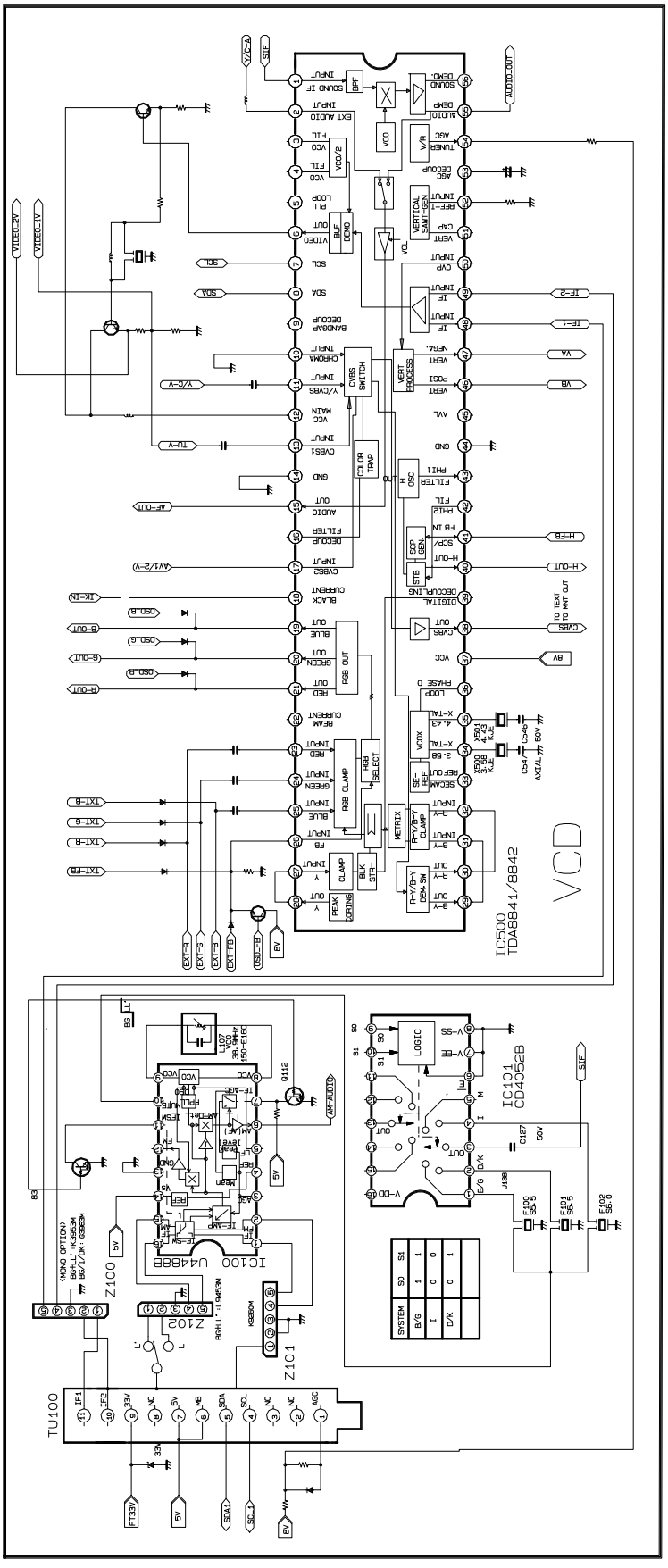
EXPLODED VIEW PART LIST

NO	PART NO		DESCRIPTIONS
	14"	20"	
⚠ 112	2055-V0744D	2055-V1221B	CPT
	-	2055-V1221A	CPT,A48QAD220X 03L7ND *AGON
120	120-101D	120-C93G	SPEAKER
⚠ 150	150-D02B	150-D02M	COIL,DEGAUSSING
⚠ 153	153-113V	153-276A	DY
⚠ 170	170-A01A	170-A01D	LEAD SET,CPT EARTH
300	-	3091V00057S	CABINET ASSY(GRANDIN)
	-	3091V00057U	CABINET ASSY(HYPSON)
	3091V00064X	3091V00057T	CABINET ASSY,LG
310	5020V00137A	5020V00118A	BUTTON,CONTROL
315	315-740H	315-740K	DOOR,CST
320	4970V00001A	4970V00001A	SPRING,CST DOOR
330	320-062J	320-075B	SPRING,KNOB
340	5020V00135A	5020V00116A	BUTTON,POWER MAIN
350	5020V00138A	5020V00119A	BUTTON,CH/VOL
360	5020V00136A	5020V00117A	BUTTON,POWER SUB
400	3809V00076E	3809V00043M	BACK COVER ASSY
501	4810V00012A	4810V00012A	BRACKET,SMPS
520	6871VDM076C	6871VDM076B	PWB ASSY,MAIN2
601	4810V00156A	4810V00156A	BRACKET,MAIN,U70,(33DECK)
602	4814V00016B	4814V00016B	SHIELD,MAIN 1 BOTTOM
603	4814V00015E	4814V00015F	SHIELD,TOP CASE,33DECK
610	6871VMM323B	6871VMM323B	PWB ASSY,MAIN(LL/BG,W/O TXT)
	6871VMM323C	6871VMM323C	PWB ASSY,MAIN(KE-,W/TXT)
	6871VMM323E	6871VMM323E	PWB ASSY,MAIN(KE-,W/O TXT)
913	332-057A	332-057B	SCREW ASSY,HEXAGON HEAD
943	1PTF0403116	1PTF0403116	SCREW,TAP TITE D4.0 L16.0
A00	6721R-0105A	6721R-0105A	DECK ASSY,D33
⚠ P851	6410VEH002B	6410VEH002B	POWER CORDN VDE/SEMKO 2
	174-225K	174-225E	CORD ASSY.POWER FOR UK

BLOCK DIAGRAM

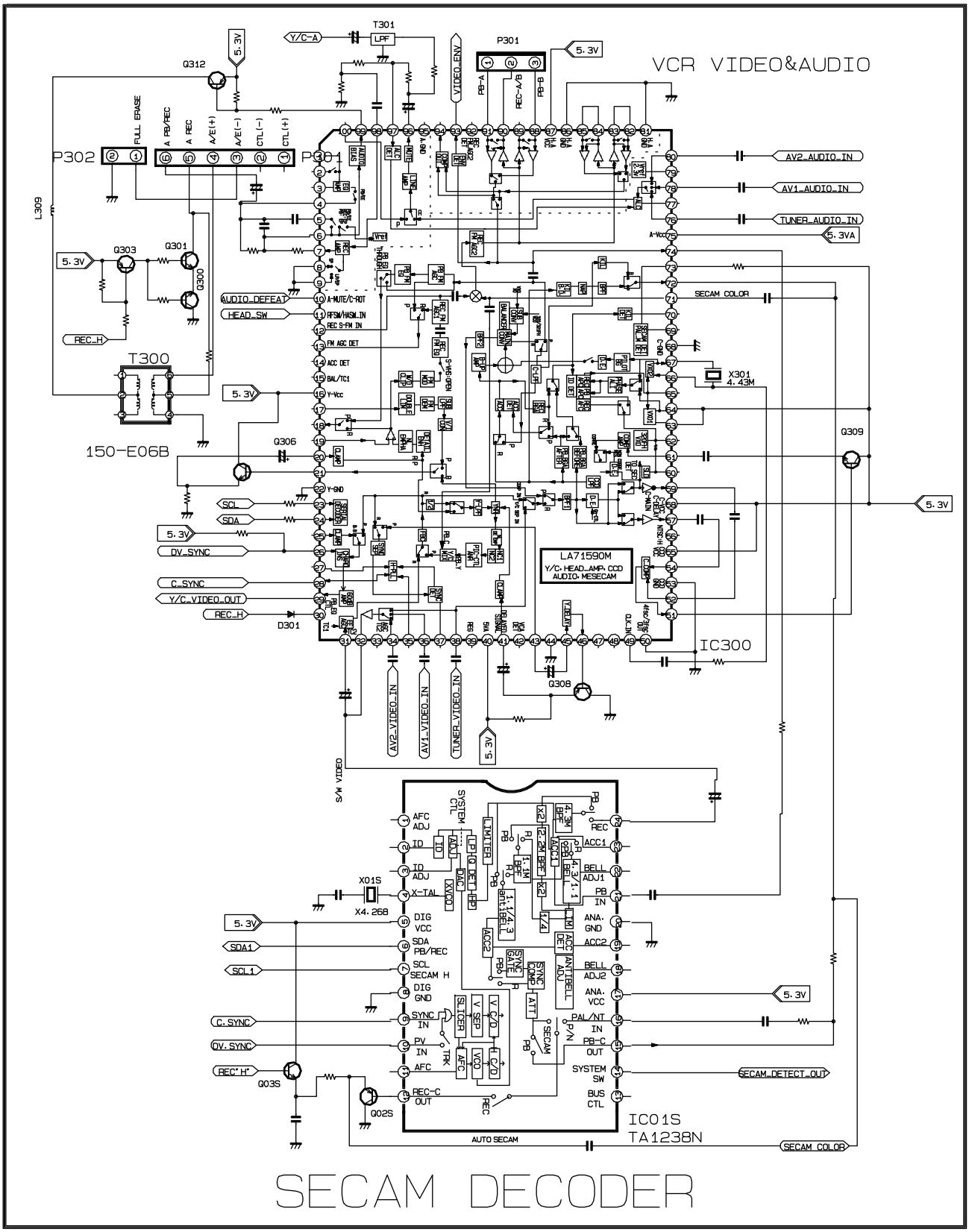


VCD BLOCK DIAGRAM



ELECTRICAL

VIDEO/AUDIO BLOCK DIAGRAM



REPLACEMENT PARTS LIST

1. Mechanical Section

NSP : Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
				ASSEMBLY PARTS SECTION		
		A00	6721R-0105A	DECK ASSY	D33 (2HD, NP, VCR)	
		A01	6723R-0101B	DRUM ASSY	D33-2CH SP/EP (5M2)	
	OR	A01	6723R-B101B	DRUM(CIRC) ASSY	D33-2CH SP/EP (5M2)	
	OR	A01	6723R-D101B	DRUM(CIRC) ASSY	D33-2CH SP/EP (5M2)	
		A02	4261R-0012A	ARM ASSY	T/UP	
		A03	4261R-0003A	ARM ASSY	CLEANER	
		A04	4811R-0011A	BRACKET ASSY	L/D MOTOR	
		A11	4470R-0028A	GEAR ASSY	P3	
		A12	4470R-0026A	GEAR ASSY	P2	
		A21	4931R-0015A	HOLDER ASSY	CST	
		A22	4811R-0014A	BRACKET ASSY	DOOR	
		A23	4261R-0010A	ARM ASSY	F/L	
		A24	4510R-0019A	LEVER ASSY	SWITCH	
				PARTS SECTION		
		001	6723R-0104B	DRUM ASSY	SUB D33-2CH SP/EP (5M2)	
		002	4680RB0004A	MOTOR(MECH)	DRUM F2OEL-81 SANKYO D33	
	OR	002	4680RB0005A	MOTOR(MECH)	DRUM GVD-033A LGEC D33	
		003	4930R-0106A	HOLDER	FPC(2CH)	
		004	5006R-0014A	CAP	FPC	
		005	276-100A	CAP	A CLEANER	NSP
		006	434-242A	ROLLER	CLEANER	NSP
		007	4260R-0009A	ARM	CLEANER	NSP
		008	4970R-0043A	SPRING	T/UP	
		009	4260R-0011A	ARM	T/UP	
		010	4770R-0004A	BAND(MECH) ASSY	TENSION	
		011	4261R-0004A	ARM ASSY	TENSION	
		012	3041R-0003A	BASE ASSY	P2	
	OR	012	3041R-0003B	BASE ASSY	P2 (D/C)	
		013	3041R-0004A	BASE ASSY	P3	
	OR	013	3041R-0004B	BASE ASSY	P3 (D/C)	
		014	3041R-0007A	BASE ASSY	P4	
		015	5870R-0001A	OPENER	LID	
		016	3041R-0005A	BASE ASSY	A/C HEAD(LGEC)	
		017	4408R-0001A	REEL	S	
		018	4970R-0054A	SPRING	SB	
		019	4421R-0003A	BRAKE ASSY	S	
		020	4970R-0053A	SPRING	TB	
		021	4421R-0004A	BRAKE ASSY	T	
		022	523-833B	HEAD	FE D33. LG C&D/ST	
		023	4980R-0010A	SUPPORTER	CST	
		024	4261R-0008A	ARM ASSY	IDLER	
		025	4810R-0053A	BRACKET	L/D MOTOR	NSP
		026	4681R-0007A	MOTOR ASSY	L/D	NSP
		027	4470R-0025A	GEAR	WHEEL	NSP
		028	4408R-0002A	REEL	T	
		029	4261R-0011A	ARM ASSY	PINCH (MOLD BEARING)	
		031	4970R-0052A	SPRING	TENSION	

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		032	3141R-0002A	CHASSIS ASSY	D33	NSP
		051	4400R-0005A	BELT	CAPSTAN	
		052	4680RA0002A	MOTOR(MECH)	CAPSTAN F2QSB SANKYO D33	
	OR	052	4680RA0003A	MOTOR(MECH)	CAPSTAN GVC-033A LGEC D33	
		053	4974R-0018A	GUIDE	RACK F/L	
		054	4470R-0037A	GEAR	RACK F/L	
		055	4470R-0033A	GEAR	DRIVE	
		056	4470R-0032A	GEAR	CAM	
		057	4470R-0036B	GEAR	CONNECT	
		060	4510R-0025A	LEVER	F/R	
		061	4265R-0002A	CLUTCH ASSY	D33	
		062	4470R-0044A	GEAR ASSY	UP/D	
		063	4970R-0051A	SPRING	UP/D	
		064	4470R-0034A	GEAR	SECTOR	
		065	4510R-0016A	LEVER	P3	NSP
		066	4970R-0046A	SPRING	L/D	NSP
		067	4470R-0029A	GEAR	P3	NSP
		068	4470R-0027A	GEAR	P2	NSP
		069	4970R-0046A	SPRING	L/D	NSP
		070	4510R-0015A	LEVER	P2	NSP
		077	3300R-0157A	PLATE	SLIDER	
		078	4510R-0022A	LEVER	TENSION	
		079	3040R-0018A	BASE	TENSION	
		100	3301R-0029A	PLATE ASSY	TOP	
		101	4810R-0056A	BRACKET	SIDE(L)	
		102	4510R-0023A	LEVER	STOPPER(L)	NSP
		103	4930R-0099A	HOLDER	SIDE(L)	NSP
		104	4974R-0019A	GUIDE	CST	
		105	4930R-0098A	HOLDER	CST	NSP
		106	4930R-0100A	HOLDER	SIDE(R)	NSP
		107	4510R-0024A	LEVER	STOPPER(R)	NSP
		108	4810R-0055A	BRACKET	SIDE(R)	NSP
		109	5870R-0002A	OPENER	DOOR	NSP
		110	4260R-0018A	ARM	F/L(L)	NSP
		111	4970R-0055A	SPRING	F/L(L)	NSP
		112	3070R-0001A	BODY	F/L	NSP
		113	4970R-0056A	SPRING	F/L(R)	NSP
		114	4260R-0019A	ARM	F/L(R)	NSP
		115	4970R-0050A	SPRING	SWITCH	
		116	4510R-0020A	LEVER	SWITCH	
SCREW						
		401	1MPK0261418	PAN HEAD MACHINE SCREW +, -	+ D2.6 L4.0 MSWR3/FZY	
		406	1MEC0302018	PAN HEAD MACHINE SCREW S/W+	D3.0 L6.0 MSWR3/FZY	
		407	1APF0201718	SCREW TAP TITE(B), PAN HEAD	+ D2.0 L5.0 MSWR3/FZY	
		409	1MGC0302418	PAN HEAD MACN SCREW S/P WASH +	D3.0 L8.0, MSWR3/FZY	
		410	1APF0262218	SCREW TAP TITE(B), PAN HEAD	+ D2.6 L6.8 MSWR3/FZY	
		426	1MPC0302018	PAN HEAD MACHINE SCREW +!	D3.0 L6.0 MSWR3/FZY	
NUT, WASHER						
		504	354-001B	WASHER	P.S D3.1XD6X0.5T	
		517	1WZZR-0004B	WASHER	STOPPER	
		518	1WZZR-0004A	WASHER	STOPPER	

The components identified by mark ⚠ is critical for safety.
Replace only with part number specified.

REPLACEMENT PARTS LIST

LOCA. NO	PART NO	DESCRIPTION
	IC	
IC01	0IGS899603A	IC,LG8996-03A *LANG E/D/F
"	0IGS899602A	IC,LG8996-02A *LANG E/I/S
IC01S	0ITO123800A	IC,TA1238N SECA
IC02	0ISG241600A	IC,ST24C16 8D EEPROM(16K)
IC03	0ISS753300A	IC,KA7533Z RESET T0-92 TP 3.3V
IC04	0ISS753300A	IC,KA7533Z RESET T0-92 TP 3.3V
IC05	0ISA164500B	IC,LB1645N 10SIP BK MOTOR DRIVE I
IC06	0IMI350410R	IC,M35041-091FP 20SOP TP OSD
IC100	0ITF448800A	IC,U4488B 16DIP BK SIF+AM DEMODUL
IC101	0ISG405200B	IC,HCF4052BE 16P,DIP BK DIFF-4CH
IC200	0ISA701600A	IC,LA7016 8S ANALOG S/W
IC201	0ISA701600A	IC,LA7016 8S ANALOG S/W
IC202	0ISA722200A	IC,LA7222 12S ANALOG S/W(2CH)
IC301	0ISA715910A	IC,LA71591M 100QFP BK AVCP 1CHIP
IC500	0IPH884212A	IC,TDA8842(S1)/N2 56P,SDIP BK MUL
IC601	0ISG200600A	IC,TDA2006 5Z 1CHX10W AUDIO AMP.
IC701	0IPH835150A	IC,TDA8351/N6 9P,SIP BK V/OUT(W/O
IC801	0ISK670700B	IC,STR/S6707(LF.953) 9P (R5,R6)
⚠ IC802	0ISH123200B	IC,PC123 FY2PHOTO COUPLER
⚠ IC803	0ISH123200B	IC,PC123 FY2PHOTO COUPLER
IC851	0ISK115000A	IC,SE115N(LF12) 3P 115V ERROR AMP
"(14")	0ISK110000A	IC,SE110N(LF12) 3P 110V ERROR AMP
IC852	0ISH052100A	IC,PQ05RF21 4P(TO-220) 5V S/W REG
IC853	0IKE780800A	IC,KIA7808PI 3P(TO-220IS) 1A,8V
IC855	0ISS781200H	IC,KA78R12 4P,TO-220F BK LOW DROP
IC856	0ISS781200H	IC,KA78R12 4P,TO-220F BK LOW DROP
IC857	0IKE780600B	IC,KIA7806PI TO-220IS 6V,1A
IC901	0IPH610700A	IC,TDA6107Q SIP9 BK VIDEO OUT AMP
	DIODE	
D01	0DD400309AD	DIODE,RECTIFIER IN4003A K-ROHM
D02	0DD400309AD	DIODE,RECTIFIER IN4003A K-ROHM
D03	0DD414809ED	DIODE,1N4148 TA
D04	0DD414809ED	DIODE,1N4148 TA
D05	0DD414809ED	DIODE,1N4148 TA
D07	0DD414809ED	DIODE,1N4148 TA
D18	0DD400309AD	DIODE,RECTIFIER IN4003A K-ROHM
D20	0DD414809ED	DIODE,1N4148 TA
D22	0DD414809ED	DIODE,1N4148 TA
D26	0DD400309AD	DIODE,RECTIFIER IN4003A K-ROHM
D100	0DD414809ED	DIODE,1N4148 TA
D101	0DD859009AA	DIODE,SILICON MA859
D102	0DD859009AA	DIODE,SILICON MA859
D301	0DD414809ED	DIODE,1N4148 TA
D500	0DD414809ED	DIODE,1N4148 TA
D501	0DD414809ED	DIODE,1N4148 TA
D502	0DD414809ED	DIODE,1N4148 TA
D503	0DD414809ED	DIODE,1N4148 TA
D504	0DD414809ED	DIODE,1N4148 TA
D505	0DD414809ED	DIODE,1N4148 TA
D506	0DD414809ED	DIODE,1N4148 TA
D507	0DD414809ED	DIODE,1N4148 TA

LOCA. NO	PART NO	DESCRIPTION
D509	0DD414809ED	DIODE,1N4148 TA
D510	0DD859009AA	DIODE,SILICON MA859
D511	0DD859009AA	DIODE,SILICON MA859
D512	0DD181009AB	DIODE,SWITCHING KDS181 85V 300MA
D601	0DD414809ED	DIODE,1N4148 TA
D602	0DD414809ED	DIODE,1N4148 TA
D603	0DD414809ED	DIODE,1N4148 TA
D701	0DD060009AC	DIODE,TVR06J 0.6A/600V 250NS
D702	0DD150009CA	DIODE,RECTIFIER RGP15J,TP(52MM)
D703	0DD060009AC	DIODE,TVR06J 0.6A/600V 250NS
D704	0DD414809ED	DIODE,1N4148 TA
D781	0DD150009CA	DIODE,RECTIFIER RGP15J,TP(52MM)
D805	0DD150009CE	DIODE,GP15J TP (1.5A/600V) GI
D806	0DD060009AC	DIODE,TVR06J 0.6A/600V 250NS
D807	0DD060009AC	DIODE,TVR06J 0.6A/600V 250NS
D808	0DD060009AC	DIODE,TVR06J 0.6A/600V 250NS
D809	0DD100009AL	DIODE,EH-1ZV(1)
D810	0DD414809ED	DIODE,1N4148 TA
D811	0DD414809ED	DIODE,1N4148 TA
D850	0DD060009AC	DIODE,TVR06J 0.6A/600V 250NS
D851	0DD560009AA	DIODE,BYT56M TEMIC TP TEMIC
D852	0DD100009AE	DIODE,RECTIFIER RU1A V(1)
D853	0DD420000BB	DIODE,D4L20U SHINDENGEN
D854	0DD420000BB	DIODE,D4L20U SHINDENGEN
D855	0DD360009AA	DIODE,BYW36 TP (2A/600V)
D858	0DD414809ED	DIODE,1N4148 TA
D859	0DD360009AA	DIODE,BYW36 TP (2A/600V)
D860	0DD060009AC	DIODE,TVR06J 0.6A/600V 250NS
D901	0DD400309AD	DIODE,RECTIFIER IN4003A K-ROHM
⚠ DB801	0DD260000BB	DIODE,BRIDGE D2SBA60(STK)
LD03	4931R-0017A	HOLDER ASSY,LED
LED01	162-002A	DIODE LED,A'SSY(DL-G11RA)
LED03	4930V00097A	HOLDER,LED ASSY(3P)
ZD01	0DZ680009BB	DIODE,ZENER MTZJ6.8B DO34 0.5W 6
ZD02	0DZ510009AB	DIODE,ZENER MTZ5.1B,TP(52MM),ROHM
ZD100	0DZ330009BA	DIODE,ZENER HZT33(TP)
ZD201	0DZ560009CF	DIODE,ZENER MTZJ5.6B DO34 0.5W 5
ZD202	0DZ560009CF	DIODE,ZENER MTZJ5.6B DO34 0.5W 5
ZD500	0DZ180009AG	DIODE,ZENER MTZJ18B DO34 500MW 1
ZD601	0DZ620009BB	DIODE,ZENER MTZJ6.2B DO34 0.5W 6
ZD701	0DZ820009AH	DIODE,ZENER MTZJ8.2B DO34 500MW
ZD702	0DZ820009AH	DIODE,ZENER MTZJ8.2B DO34 500MW
ZD801	0DZ680009BB	DIODE,ZENER MTZJ6.8B DO34 0.5W 6
ZD860	0DZ110009AD	DIODE,ZENER MTZJ11B DO34 500MW 1
ZD861	0DZ360009DA	DIODE,ZENER MTZ3.6B,(52MM) TP ROHM
ZD862	0DZ510009AB	DIODE,ZENER MTZ5.1B,TP(52MM),ROHM
ZD901	0DZ750009AG	DIODE,ZENER MTZJ7.5B DO34 0.5W 7
ZD902	0DZ750009AG	DIODE,ZENER MTZJ7.5B DO34 0.5W 7
ZD903	0DZ750009AG	DIODE,ZENER MTZJ7.5B DO34 0.5W 7
ZD904	0DZ750009AG	DIODE,ZENER MTZJ7.5B DO34 0.5W 7
	TRANSISTOR	
Q02S	0TR150400BA	TR,CHIP 2SA1504S(ASY) KEC

R.P.L

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LOCA. NO	PART NO	DESCRIPTION
Q03	0TR102009AG	TR,CHIP KRC102S SOT-23 TP KEC
Q03S	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q04	0TR102009AG	TR,CHIP KRC102S SOT-23 TP KEC
Q07	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q08	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q100	0TR102009AG	TR,CHIP KRC102S SOT-23 TP KEC
Q104	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q105	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q106	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q108	0TR388109AA	TR,KTC3881 CHIP KEC
Q109	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q110	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q111	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q112	0TR102009AG	TR,CHIP KRC102S SOT-23 TP KEC
Q112	0TR102009AG	TR,CHIP KRC102S SOT-23 TP KEC
Q113	0TR102009AG	TR,CHIP KRC102S SOT-23 TP KEC
Q113	0TR102009AG	TR,CHIP KRC102S SOT-23 TP KEC
Q200	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q201	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q202	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q203	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q204	0TR150400BA	TR,CHIP 2SA1504S(ASY) KEC
Q205	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q206	0TR150400BA	TR,CHIP 2SA1504S(ASY) KEC
Q207	0TR150400BA	TR,CHIP 2SA1504S(ASY) KEC
Q208	0TR102009AG	TR,CHIP KRC102S SOT-23 TP KEC
Q300	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q301	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q303	0TR150400BA	TR,CHIP 2SA1504S(ASY) KEC
Q304	0TR320509AB	TR,KTC3205-Y (KTC2236A) TP KEC
Q305	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q306	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q307	0TR150400BA	TR,CHIP 2SA1504S(ASY) KEC
Q308	0TR150400BA	TR,CHIP 2SA1504S(ASY) KEC
Q309	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q312	0TR126609AA	TR,KTA1266-Y (KTA1015) TP KEC
Q500	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q501	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q502	0TR102009AG	TR,CHIP KRC102S SOT-23 TP KEC
Q504	0TR150400BA	TR,CHIP 2SA1504S(ASY) KEC
Q505	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q506	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q507	0TR150400BA	TR,CHIP 2SA1504S(ASY) KEC
Q508	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q509	0TR150400BA	TR,CHIP 2SA1504S(ASY) KEC
Q510	0TR102009AG	TR,CHIP KRC102S SOT-23 TP KEC
Q601	0TR319809AA	TR,KTC3198-TP-Y (KTC1815)KEC
Q602	0TR319809AA	TR,KTC3198-TP-Y (KTC1815)KEC
Q781	0TR249900AA	TR,KTD2499 TO-3P(H)IS TOSHIBA
"(14")"	0TR570200AA	TR,KSD5702 BK
Q782	0TR320709AA	TR,KTC3207,TP(KTC2482),KEC
Q801	0TR385200AA	TR,2SC3852A SANKEN
Q850	0TR102409AB	TR,KTA1024-Y (KTA949) TP KEC

LOCA. NO	PART NO	DESCRIPTION
Q851	0TR319809AA	TR,KTC3198-TP-Y (KTC1815)KEC
Q853	0TR319809AA	TR,KTC3198-TP-Y (KTC1815)KEC
Q854	0TR319809AA	TR,KTC3198-TP-Y (KTC1815)KEC
Q860	0TR319809AA	TR,KTC3198-TP-Y (KTC1815)KEC
Q861	0TR322809AA	TR,KTC3228-0 TP(KTC2383),KEC
Q862	0TR968000AA	TR,KTA968A-Y KEC

CAPACITOR

C04S	0CC1500K415	15P 50V J
C05S	0CE107DF618	100UF STD 16V M
C06	0CE3363F618	33UF SRE 16V M
C07	0CN2230H949	22000P 25V Z
C08S	0CE225DK618	2.2000UF STD 50V M
C09	0CE2263F618	22UF SRE 16V M
C10	0CC1800K415	18P 50V J
C11	0CC1800K415	18P 50V J
C12S	0CE107DF618	100UF STD 16V M
C14S	0CE474DK618	0.4700UF STD 50V M
C16	0CE4763F618	47UF SRE 16V M
C16S	0CN1030F679	10000P 16V M
C17S	0CE474DK618	0.4700UF STD 50V M
C19S	0CE106DF618	10UF STD 16V M
C32	0CE4753K618	4.7UF SRE 50V M
C36	0CQ4731N509	0.047U 100V K
C37	0CN1040K949	0.1M 50V Z
C38	181-007C	ECQ-V1H104JZ3(TR),50V 0.1
C39	0CE4753K618	4.7UF SRE 50V M
C45	0CE107DF618	100UF STD 16V M
C47	0CE1074F618	100UF SRA 16V M
C48	0CE477DF618	470UF STD 16V M
C50	0CE4763F618	47UF SRE 16V M
C51	0CN1040K949	0.1M 50V Z
C52	0CE4763F618	47UF SRE 16V M
C53	0CE4763F618	47UF SRE 16V M
C54	181-002B	SUPER CAP.FSOH473Z
C55	0CQ3332K439	0.0330UF S 50V J
C56	0CE4763F618	47UF SRE 16V M
C58	0CE4763F618	47UF SRE 16V M
C61	0CE1063F618	10UF SRE 16V M
C63	0CE4763F618	47UF SRE 16V M
C72	0CC8200K415	82P 50V J
C73	0CC3900K415	39P 50V J
C74	0CE1053K618	1UF SRE 50V M
C80	0CE4763F618	47UF SRE 16V M
C84	0CE4763F618	47UF SRE 16V M
C85	0CE107DF618	100UF STD 16V M
C88	0CN1030F679	10000P 16V M
C100	0CE476DK618	47UF STD 50V M
C101	181-007C	ECQ-V1H104JZ3(TR),50V 0.1
C105	0CE476DH618	47UF STD 25V M
C106	0CE475DK618	4.7000UF STD 50V M
C108	0CE476DF618	47UF STD 16V M
C111	0CN2230H949	22000P 25V Z

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LOCA. NO	PART NO	DESCRIPTION
C114	0CN1030F679	10000P 16V M
C115	0CE107DF618	100UF STD 16V M
C118	0CE4753K618	4.7UF SRE 50V M
C118	0CE475DK618	4.7000UF STD 50V M
C119	0CE4753K618	4.7UF SRE 50V M
C119	0CE475DK618	4.7000UF STD 50V M
C120	181-007C	ECQ-V1H104JZ3(TR),50V 0.1
C122	0CE476DK618	47UF STD 50V M
C127	181-007C	ECQ-V1H104JZ3(TR),50V 0.1
C130	0CE476DF618	47UF STD 16V M
C132	0CE107DF618	100UF STD 16V M
C133	0CE107DD618	100UF STD 10V M
C200	0CE106DF618	10UF STD 16V M
C201	0CE475DK618	4.7000UF STD 50V M
C202	0CE476DF618	47UF STD 16V M
C203	0CE107DF618	100UF STD 16V M
C204	0CE476DF618	47UF STD 16V M
C207	0CE106DF618	10UF STD 16V M
C210	0CE105DK618	1UF STD 50V M
C210	0CE474DK618	0.4700UF STD 50V M
C214	0CE475DK618	4.7000UF STD 50V M
C220	0CE107DF618	100UF STD 16V M
C223	0CE106DF618	10UF STD 16V M
C224	0CE476DF618	47UF STD 16V M
C226	0CE337DF618	330UF STD 16V M
C227	0CN4710K519	470P 50V K
C234	0CE1063F618	10UF SRE 16V M
C234	0CE106DF618	10UF STD 16V M
C235	0CE106DF618	10UF STD 16V M
C236	0CE106DF618	10UF STD 16V M
C237	0CE1063F618	10UF SRE 16V M
C237	0CE106DF618	10UF STD 16V M
C238	0CE106DF618	10UF STD 16V M
C241	0CE475DK618	4.7000UF STD 50V M
C244	0CE106DF618	10UF STD 16V M
C250	0CN1030F679	10000P 16V M
C302	0CQ1031N509	0.01U 100V K
C303	0CE4753K618	4.7UF SRE 50V M
C305	0CQ1531N509	0.015U 100V K
C306	0CE4763F618	47UF SRE 16V M
C307	0CQ2232K439	0.0220UF S 50V J
C309	0CE1074F618	100UF SRA 16V M
C310	0CQ2221N509	0.0022U 100V K
C313	0CE1053K618	1UF SRE 50V M
C316	0CE1053K618	1UF SRE 50V M
C329	0CE1063F618	10UF SRE 16V M
C330	0CE1063F618	10UF SRE 16V M
C332	0CE1053K618	1UF SRE 50V M
C332	0CE2253K618	2.2000UF SRE 50V M
C333	0CN1040K949	0.1M 50V Z
C334	0CN1040K949	0.1M 50V Z
C335	0CN1040K949	0.1M 50V Z
C336	0CN2230H949	22000P 25V Z

LOCA. NO	PART NO	DESCRIPTION
C338	0CE4763F618	47UF SRE 16V M
C340	0CE4763F618	47UF SRE 16V M
C341	0CE1053K618	1UF SRE 50V M
C342	0CE1063F618	10UF SRE 16V M
C343	0CE1053K618	1UF SRE 50V M
C347	0CN1030F679	10000P 16V M Y
C350	0CE1074F618	100UF SRA 16V M
C351	0CE4763F618	47UF SRE 16V M
C353	0CN1030F679	10000P 16V M
C355	0CE1053K618	1UF SRE 50V M
C355	0CE4753K618	4.7UF SRE 50V M
C356	0CN2230H949	22000P 25V Z
C357	0CE1053K618	1UF SRE 50V M
C357	0CE4753K618	4.7UF SRE 50V M
C359	0CE1053K618	1UF SRE 50V M
C365	0CE4763F618	47UF SRE 16V M
C367	0CQ2242K439	0.2200UF S 50V J
C368	0CE1063F618	10UF SRE 16V M
C368	0CE2263F618	22UF SRE 16V M
C369	0CQ2242K439	0.2200UF S 50V J
C370	0CE3363F618	33UF SRE 16V M
C371	0CQ2242K439	0.2200UF S 50V J
C377	0CE1074F618	100UF SRA 16V M
C377	0CE4763F618	47UF SRE 16V M
C379	0CE1053K618	1UF SRE 50V M
C381	0CE335DK618	3.3000UF STD 50V M
C389	0CE2263F618	22UF SRE 16V M
C390	0CE2253K618	2.2000UF SRE 50V M
C390	0CE335DK618	3.3000UF STD 50V M
C396	0CE107DF618	100UF STD 16V M
C398	0CE475DK618	4.7000UF STD 50V M
C504	0CE225DK618	2.2000UF STD 50V M
C506	0CE476DF618	47UF STD 16V M
C507	181-007F	ECQ-V1H224JZ3(TR),50V 0.2
C509	0CE107DF618	100UF STD 16V M
C510	181-007F	ECQ-V1H224JZ3(TR),50V 0.2
C512	181-007C	ECQ-V1H104JZ3(TR),50V 0.1
C519	0CE104DK618	0.1000UF STD 50V M
C528	0CE1074F618	100UF SRA 16V M
C529	0CQ4731N509	0.047U 100V K
C530	0CC6200K415	62PF 50V J
C531	0CE104DK618	0.1000UF STD 50V M
C532	0CE225DK618	2.2000UF STD 50V M
C534	0CE105DK618	1UF STD 50V M
C536	0CE684DK618	0.6800UF STD 50V M
C540	0CQ1041N455	0.1000UF 100V J
C541	0CSZVTA001G	2.2UF 25V K
"	0CSZVTA001C	TAP105K025BRS *KE-
C544	0CE106DH618	10UF STD 25V M
C545	181-007C	ECQ-V1H104JZ3(TR),50V 0.1
C546	0CC2710K415	270P 50V J
C547	0CC2710K415	270P 50V J
C547	0CN2710K519	270P 50V K

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LOCA. NO	PART NO	DESCRIPTION
C548	181-007G	ECQ-V1H334JZ3(TR),50V 0.3
C601	0CE475DK618	4.7000UF STD 50V M
C602	0CE226DK618	22UF STD 50V M
C603	0CQ3931N509	0.0390UF 100V K
C604	0CE106DH618	10UF STD 25V M
C605	0CQ1041N509	0.1U 100V K
C606	0CE227DJ618	220UF STD 35V M
C607	0CE227DF618	220UF STD 16V M
C607	0CE477DF618	470UF STD 16V M
C608	0CN1010K519	100P 50V K
C609	0CE106DF618	10UF STD 16V M
C610	0CE475DK618	4.7000UF STD 50V M
C651	0CN1010K519	100P 50V K
C701	181-009V	PP 200V 0.047UF K
C702	0CE2261R618	22M SM 250V M
C703	0CK4710W515	470PF 500V K
C704	0CE337DK618	330UF STD 50V M
C705	0CK4710W515	470PF 500V K
C706	0CQ1031N509	0.01U 100V K
C708	0CE106DN618	10UF STD 100V M
C709	0CK4710W515	470PF 500V K
C731	0CN1010K519	100P 50V K
C732	0CQ1041N509	0.1U 100V K
C733	0CE337DK618	330UF STD 50V M
C734	0CE226DN618	22UF STD 100V M
C736	0CQ1031N509	0.01U 100V K
C738	0CQ1041N509	0.1U 100V K
C739	0CN1040K949	0.1M 50V Z F TA52
C740	0CX5600K409	56P 50V J SL TA52
C743	0CQ1031N509	0.01U 100V K
C744	0CN1010K519	100P 50V K
C781	181-015J	1600V 0.0086UF H
"(14")	181-015G	1600V 0.0077UF H
C782	0CE105DP618	1UF STD 160V M
C783	0CK8210W515	820P 500V K
"(20")	0CK3310W515	330P 500V K
C784	0CN3310K519	330P 50V K
C785	0CE225DP618	2.2000UF STD 160V M
C786	0CK8210W515	820P 500V K
C787	181-013C	200V 0.39UF J
⚠ C801	0CQZVBK002A	A.C 275V 0.1UF M (S=15)
⚠ C802	0CQZVBK002A	A.C 275V 0.1UF M (S=15)
C805	0CK10201515	1000P 1KV K
C806	181-001H	CE 400V 330UF M
C807	0CK10201515	1000P 1KV K
C808	0CK1020W515	1000P 500V K
C809	0CE106DN618	10UF STD 100V M
C810	0CE227DF618	220UF STD 16V M
C811	181-014A	1600V 0.0022UF J
C811	181-033T	2KV B 222K TP7.5
C812	181-091J	R 821K 2KV TP7.5
⚠ C813	181-120K	ACT 4KV E 222M
C814	0CE107DJ618	100UF STD 35V M

LOCA. NO	PART NO	DESCRIPTION
C816	0CQ1041N509	0.1U 100V K
C850	0CK4710W515	470PF 500V K
C851	0CK4710W515	470PF 500V K
C852	0CK4710W515	470PF 500V K
C853	0CK4710W515	470PF 500V K
C854	0CK4710W515	470PF 500V K
C855	0CK4710W515	470PF 500V K
C856	0CE107DN618	100UF STD 100V M
C857	0CE108DF618	1000UF STD 16V M
C858	0CE108DH618	1000UF STD 25V M
C859	0CE108DJ618	1000UF STD 35V M
C860	0CE227DP61A	220UF STD 160V M
C862	0CE108DF618	1000UF STD 16V M
C863	0CE477DF618	470UF STD 16V M
C864	0CE106DF618	10UF STD 16V M
C865	0CE1071P61A	100UF SM 160V M
C866	0CE477DF618	470UF STD 16V M
C867	0CE477DH618	470UF STD 25V M
C868	0CE228DF618	2200UF STD 16V M
C869	0CK4710W515	470PF 500V K B TR
C870	0CQ1031N509	0.01U 100V K
C874	0CE477DF618	470UF STD 16V M
C875	0CE228DD618	2200UF STD 10V M
C876	0CE4741K636	0.47UF SM 50V M
C904	0CQZVBK002A	A.C 275V 0.1UF M (S=15)
C905	0CE475DR618	4.7000UF STD 250V M
C906	0CE475DR618	4.7000UF STD 250V M
C907	181-033T	2KV B 222K TP7.5
FUSE		
⚠ F801	0FT4001B53C	FUSE,TIME LAG 4000MA 250V 5.2X20
⚠ F851	131-096E	FUSE,NON TIME DELAY 4000MA 125V 2.5X7.6
⚠ F852	131-096E	FUSE,NON TIME DELAY 4000MA 125V 2.5X7.6
⚠ F853	131-096E	FUSE,NON TIME DELAY 4000MA 125V 2.5X7.6
CORE		
FB651	125-123A	CORE (CIRC),FERRITE BFD3565R2F
FB801	125-022K	CORE (CIRC),BEAD FERRITE 1UH
FB802	125-123A	CORE (CIRC),FERRITE BFD3565R2F
FB803	125-022K	CORE (CIRC),BEAD FERRITE 1UH
⚠ FB851	125-022K	CORE (CIRC),BEAD FERRITE 1UH
L222	125-022K	CORE (CIRC),BEAD FERRITE 1UH
L510	125-022K	CORE (CIRC),BEAD FERRITE 1UH
⚠ L731	125-022K	CORE (CIRC),BEAD FERRITE 1UH
L902	125-022K	CORE (CIRC),BEAD FERRITE 1UH
COIL & TRANSFORMER		
L01S	0LA0222K119	INDUCTOR,22UH K
L01	0LA1000K139	INDUCTOR,100UH K
L02S	0LA0222K119	INDUCTOR,22UH K
L02	0LA1000K139	INDUCTOR,100UH K
L03	0LA1000K139	INDUCTOR,100UH K
L04	0LA1000K139	INDUCTOR,100UH K

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LOCA. NO	PART NO	DESCRIPTION
L05	0LA1000K139	INDUCTOR,100UH K
L06	0LA0821K119	INDUCTOR,8.2UH K
L07	0LA0222K119	INDUCTOR,22UH K
L07	0LA1000K119	INDUCTOR,100UH K
L10	0LA1000K119	INDUCTOR,100UH K
L11	0LA0222K119	INDUCTOR,22UH K
L12	0LA0222K119	INDUCTOR,22UH K
L13	0LA0222K119	INDUCTOR,22UH K
L101	0LA0222K119	INDUCTOR,22UH K
L102	150-C01G	COIL,CHOKE 1.0UH A 1105
L103	0LA0102K119	INDUCTOR,10UH K
L104	0LA0102K119	INDUCTOR,10UH K
L105	0LA0102K119	INDUCTOR,10UH K
L106	0LA0122K119	INDUCTOR,12UH K
L107	150-E16C	COIL,IFT VAR,07S 1B 38.9MHZ
L108	0LA0102K139	INDUCTOR,10UH K
L144	0LA0102K119	INDUCTOR,10UH K
L200	0LA0102K119	INDUCTOR,10UH K
L200	0LA0102K119	INDUCTOR,10UH K
L201	0LA0102K119	INDUCTOR,10UH K
L203	0LA0102K119	INDUCTOR,10UH K
L204	0LA0102K119	INDUCTOR,10UH K
L205	0LA0102K119	INDUCTOR,10UH K
L206	0LA0102K119	INDUCTOR,10UH K
L207	0LA1000K119	INDUCTOR,100UH K
L209	0LA1000K119	INDUCTOR,100UH K
L210	0LA0102K119	INDUCTOR,10UH K
L300	0LA0222K119	INDUCTOR,22UH K
L301	0LA0562K119	INDUCTOR,56UH K
L302	0LA0332K119	INDUCTOR,33UH K
L303	0LA0222K119	INDUCTOR,22UH K
L306	0LA0222K119	INDUCTOR,22UH K
L307	0LA0222K119	INDUCTOR,22UH K
L309	0LA0272K119	INDUCTOR,27UH K
L310	0LA0222K119	INDUCTOR,22UH K
L391	0LA0102K119	INDUCTOR,10UH K
L500	0LA0331K119	INDUCTOR,3.3UH K
L501	0LA0331K119	INDUCTOR,3.3UH K
L502	0LA0821K119	INDUCTOR,8.2UH K
L503	0LA0102K119	INDUCTOR,10UH K
L504	0LA0561K119	INDUCTOR,5.6UH K
L505	0LA0561K119	INDUCTOR,5.6UH K
L506	0LA0561K119	INDUCTOR,5.6UH K
L507	0LA0102K139	INDUCTOR,10UH K
L508	0LA0102K119	INDUCTOR,10UH K
L509	0LA0102K119	INDUCTOR,10UH K
L652	0LA0101K119	INDUCTOR,1.0UH K
L733	0LA0102K139	INDUCTOR,10UH K
L734	0LA0102K139	INDUCTOR,10UH K
L782	150-L02C	COIL,H-LINEARITY 170UH
"(14")"	150-L02W	COIL,H-LINEARITY 11.5UH
⚠ L801	150-F06H	COIL,LINE FILTER SQE2930 30MH
L851	150-C02E	COIL,CHOKE 50UH R 1217

LOCA. NO	PART NO	DESCRIPTION
L901	0LR0102K520	INDUCTOR,10M K
T300	633-032N	COIL,CAN BIAC OSC DEO-010 KSE
T301	150-B05C	COIL,L/C FILTER(07S) LPF
⚠ T701	6174Z-6022D	FBT,FTMPN91
"(14")"	6174Z-6022E	FBT,FTMPN91
T781	151-C02H	TRANSFORMER,H-DRIVE,EI-19,BULK
⚠ T801	151-A13J	TRANSFORMER,SMPS EER4215 700UH
CONNECTOR		
	387-907D	CONNECTOR ASSY,1P MXH8610 250MM
	387-916D	CONNECTOR ASSY,1P 250MM
	6631V25014G	CONNECTOR ASSY,2.5MM 3P(L=700)
	6631V25021E	CONNECTOR ASSY,13P(L=450)
	6631V25021R	CONNECTOR ASSY,2P 80MM
	6631V25027G	CONNECTOR ASSY,2.5MM 8P(L=400)
P01	561-234V	CONNECTOR(CIRC),GF120-07S-TS 7PIN 1.25MM
P04	6630R2S011A	CONNECTOR(CIRC),TMC-T02X-C1 2PIN 2.5MM
P101A	387-A02Q	CONNECTOR ASSY,2P 80MM 2.5
P301	6630R5S008E	CONNECTOR(CIRC),06(11)FM22.5H-BTR 6PIN 1MM
P302	561-251B	CONNECTOR(CIRC),GB201-2P-TS-B
P303	561-234Z	CONNECTOR(CIRC),GF120-3S-TS-A 3PIN 1.25MM
P651	387-B02E	CONNECTOR ASSY,2P SHIELD WIRE (L=300)
P805A	6631V25017G	CONNECTOR ASSY,2.5MM 12P(L=400)
P901A	387-A05D	CONNECTOR ASSY,5P (L=250)
PD04	561-234V	CONNECTOR(CIRC),GF120-07S-TS 7PIN 1.25MM
PD04	6630R2P005C	CONNECTOR(CIRC),TMC-J08P-A1 8PIN 2MM
RESISTOR		
⚠ FR701	0RF0561J607	5.60 1W 5% TA62
⚠ FR702	0RF0470J607	0.47 1W 5% TA62
⚠ FR704	0RF0101H609	1.0 1/2W 5 TA52
FR851	0RF0470H609	0.47 1/2W 5 TA52
⚠ FR854	0RF0101J607	1 1W 5% TA62
FR901	180-D02E	2W 1.0 J TA31
"(14")"	180-D02L	2W 2.0 J TA31
FR902	180-D02E	2W 1.0 J TA31
J200	0RD1001F609	1.0K 1/6W 5 TA52
J833	0RF0470H609	0.47 1/2W 5 TA52
R01	0RD1001F609	1.0K 1/6W 5 TA52
R02	0RD1001F609	1.0K 1/6W 5 TA52
R03	0RD1001F609	1.0K 1/6W 5 TA52
R04	0RD1001F609	1.0K 1/6W 5 TA52
R06	0RD1001F609	1.0K 1/6W 5 TA52
R08	0RD1001F609	1.0K 1/6W 5 TA52
R08S	0RD5600F609	560 1/6W 5 TA52
R09S	0RD1000F609	100 1/6W 5 TA52
R09	0RD1001F609	1.0K 1/6W 5 TA52
R10	0RD1000F609	100 1/6W 5 TA52
R11	0RD1000F609	100 1/6W 5 TA52
R12	0RD1000F609	100 1/6W 5 TA52
R14	0RD2200F609	220 1/6W 5 TA52
R17	0RD5601F609	5.6K 1/6W 5 TA52
R18	0RD1001F609	1.0K 1/6W 5 TA52

R.P.L

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LOCA. NO	PART NO	DESCRIPTION
R19	0RD1001F609	1.0K 1/6W 5 TA52
R20	0RD2200F609	220 1/6W 5 TA52
R22	0RD2200F609	220 1/6W 5 TA52
R23	0RD2200F609	220 1/6W 5 TA52
R24	0RD2200F609	220 1/6W 5 TA52
R25	0RD2200F609	220 1/6W 5 TA52
R26	0RD2200F609	220 1/6W 5 TA52
R27	0RD1002F609	10K 1/6W 5 TA52
R28	0RD2200F609	220 1/6W 5 TA52
R31	0RD4701F609	4.70K 1/6W 5% TA52
R33	0RD2200F609	220 1/6W 5 TA52
R38	0RD4701F609	4.70K 1/6W 5% TA52
R42	0RD3300F609	330 1/6W 5 TA52
R43	0RD2200F609	220 1/6W 5 TA52
R45	0RD2200F609	220 1/6W 5 TA52
R46	0RD2200F609	220 1/6W 5 TA52
R55	0RD5600F609	560 1/6W 5 TA52
R57	0RD1000F609	100 1/6W 5 TA52
R59	0RD1801F609	1.8K 1/6W 5 TA52
R67	0RD8201F609	8.2K 1/6W 5 TA52
R68	0RD1801F609	1.8K 1/6W 5 TA52
R69	0RD1001F609	1.0K 1/6W 5 TA52
R74	0RD5602F609	56K 1/6W 5 TA52
R77	0RD1001F609	1.0K 1/6W 5 TA52
R90	0RD2200F609	220 1/6W 5 TA52
R92	0RD4701F609	4.70K 1/6W 5% TA52
R97	0RD5601F609	5.6K 1/6W 5 TA52
R98	0RD5601F609	5.6K 1/6W 5 TA52
R99	0RS0561K607	5.60 2W 5% TA62
R101	0RD4702F609	47K 1/6W 5 TA52
R102	0RD1001H609	1K OHM 1/2 W 5% TA52
R109	0RD3302F609	33K 1/6W 5% TA52
R110	0RD1001F609	1.0K 1/6W 5 TA52
R112	0RD0102F609	10 1/6W 5 TA52
R125	0RD1004F609	1.0M 1/6W 5 TA52
R128	0RD1000F609	100 1/6W 5 TA52
R144	0RD4701F609	4.70K 1/6W 5% TA52
R146	0RD0102F609	10 1/6W 5 TA52
R147	0RD1001F609	1.0K 1/6W 5 TA52
R148	0RD1001F609	1.0K 1/6W 5 TA52
R149	0RD1001F609	1.0K 1/6W 5 TA52
R153	0RD1002F609	10K 1/6W 5 TA52
R153	0RD4701F609	4.70K 1/6W 5% TA52
R154	0RD4701F609	4.70K 1/6W 5% TA52
R205	0RD4701F609	4.70K 1/6W 5% TA52
R208	0RD1502F609	15K 1/6W 5 TA52
R214	0RD4700F609	470 1/6W 5 TA52
R215	0RD2200F609	220 1/6W 5 TA52
R219	0RD0682F609	68 1/6W 5 TA52
R220	0RD5101F609	5.1K 1/6W 5 TA52
R221	0RD5101F609	5.1K 1/6W 5 TA52
R224	0RD1001F609	1.0K 1/6W 5 TA52
R235	0RD1000F609	100 1/6W 5 TA52

LOCA. NO	PART NO	DESCRIPTION
R236	0RD1002F609	10K 1/6W 5 TA52
R237	0RD1002F609	10K 1/6W 5 TA52
R238	0RD1001F609	1.0K 1/6W 5 TA52
R302	0RD1000F609	100 1/6W 5 TA52
R309	0RD5600F609	560 1/6W 5 TA52
R319	0RD1002F609	10K 1/6W 5 TA52
R321	0RD1001F609	1.0K 1/6W 5 TA52
R333	0RD1000F609	100 1/6W 5 TA52
R334	0RD1000F609	100 1/6W 5 TA52
R348	0RD1001F609	1.0K 1/6W 5 TA52
R360	0RD2202F609	22K 1/6W 5 TA52
R361	0RD6801F609	6.8K 1/6W 5 TA52
R363	0RD4702F609	47K 1/6W 5 TA52
R364	0RD4702F609	47K 1/6W 5 TA52
R365	0RD4702F609	47K 1/6W 5 TA52
R380	0RD1000F609	100 1/6W 5 TA52
R381	0RD1000F609	100 1/6W 5 TA52
R382	0RD1000F609	100 1/6W 5 TA52
R451	0RD2201F609	2.2K 1/6W 5 TA52
R452	0RD2701F609	2.7K 1/6W 5 TA52
R453	0RD3901F609	3.9K 1/6W 5 TA52
R454	0RD6801F609	6.8K 1/6W 5 TA52
R508	0RD0472F609	47 1/6W 5% TA
R512	0RD1002F609	10K 1/6W 5 TA52
R515	0RD1001F609	1.0K 1/6W 5 TA52
R516	0RD1001F609	1.0K 1/6W 5 TA52
R517	0RD1001F609	1.0K 1/6W 5 TA52
R521	0RD1003F609	100K 1/6W 5 TA52
R527	0RD9102F609	91K 1/6W 5 TA52
R529	0RN3902F409	39K 1/6W 1% TA52
R530	0RD1201F609	1.2K 1/6W 5 TA52
R601	0RD1003F609	100K 1/6W 5 TA52
R602	0RD1003F609	100K 1/6W 5 TA52
R603	0RD1003F609	100K 1/6W 5 TA52
R604	0RS0221H609	2.2 1/2W 5 TA52
R605	0RD6802F609	68K 1/6W 5 TA52
R606	0RD8201F609	8.2K 1/6W 5 TA52
R607	0RD4701F609	4.70K 1/6W 5% TA52
R608	0RD4701F609	4.70K 1/6W 5% TA52
R609	0RD1001F609	1.0K 1/6W 5 TA52
R610	0RD1201F609	1.2K 1/6W 5 TA52
R611	0RD1003F609	100K 1/6W 5 TA52
R651	0RD2000H609	200 1/2W 5 TA52
R652	0RD2000H609	200 1/2W 5 TA52
R654	0RD4300F609	430 1/6W 5 TA52
R702	0RS5101H609	5.1K 1/2W 5 TA52
R703	0RD5101F609	5.1K 1/6W 5 TA52
“(14”)	0RD6201F609	6.2K 1/6W 5 TA52
R704	0RD2003H609	200K 1/2W 5 TA52
R706	0RD4701H609	4.7K 1/2W 5 TA52
R731	0RN1501F409	1.5K 1/6W 1 TA52
“(14”)	0RN2001F409	2K 1/6W 1 TA52
R733	0RN0680J607	0.68 1W 5% TA62

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LOCA. NO	PART NO	DESCRIPTION
R734	0RD0202F609	20 1/6W 5 TA52
R735	0RS0332H609	33 1/2W 5 TA52
R739	0RS2200J607	220 1W 5% TA62
R740	0RN3901F409	3.9K 1/6W 1
R781	0RD0392H609	39 1/2W 5 TA52
R782	0RD3301H609	3.3K 1/2W 5 TA52
R783	0RS4701K607	4.70K 2W 5% TA62
R784	0RD4700F609	470 1/6W 5 TA52
R785	0RS1202K607	12K 2W 5% TA62
R786	0RD1801H609	1.8K 1/2W 5 TA52
R787	0RS2701K607	2.70K 2W 5% TA62
“(14”)	0RS6801K607	6.8K 2W 5% TA62
R788	0RD0912F609	91 1/6W 5 TA52
R801	180-A03A	G 5W 2.20 J DOUBLE
R805	0RS2202K607	22K 2W 5% TA62
R806	0RS2202K607	22K 2W 5% TA62
R807	0RS1202H609	12K 1/2W 5 TA52
R808	0RD1801F609	1.8K 1/6W 5 TA52
R809	0RD1001F609	1.0K 1/6W 5 TA52
R810	0RS0222K607	22 2W 5% TA62
R811	180-A01H	G 2W 0.27 J TA31(63)
R812	0RD5600F609	560 1/6W 5 TA52
⚠ R813	180-C02H	RC 1/2W 8.2M K
R816	0RD3900F609	390 1/6W 5 TA52
R821	0RD6801H609	6.8K 1/2W 5 TA52
R822	0RD1000H609	100 OHM 1/2 W 5% TA52
R823	0RD4701F609	4.70K 1/6W 5% TA52
R824	0RD4701F609	4.70K 1/6W 5% TA52
R825	0RD6801F609	6.8K 1/6W 5 TA52
R851	0RD1002F609	10K 1/6W 5 TA52
R851	0RD4701F609	4.70K 1/6W 5% TA52
R851	0RD8201F609	8.2K 1/6W 5 TA52
R852	0RD3301F609	3.3K 1/6W 5 TA52
R853	0RD2001F609	2.0K 1/6W 5 TA52
R856	0RD1002F609	10K 1/6W 5 TA52
R857	0RD4701F609	4.70K 1/6W 5% TA52
R858	0RF0470H609	0.47 1/2W 5 TA52
R860	0RS4700J607	470 1W 5% TA62
R862	0RS0472H609	47 1/2W 5 TA52
R863	0RD1002F609	10K 1/6W 5 TA52
R864	0RD1002F609	10K 1/6W 5 TA52
R864	0RS3002H609	30K 1/2W 5 TA52
R865	0RS0470K607	0.47 2W 5% TA62
R866	0RS0470J607	0.47 1W 5% TA62
R867	0RS0470K607	0.47 2W 5% TA62
R870	0RD1002F609	10K 1/6W 5 TA52
R871	0RD2002F609	20K 1/6W 5 TA52
R872	0RD2002H609	20K 1/2W 5 TA52
R873	0RD1001H609	1K OHM 1/2 W 5% TA52
R874	0RS0102J607	10 1W 5% TA62
R901	0RD2200F609	220 1/6W 5 TA52
R902	0RD2200F609	220 1/6W 5 TA52
R903	0RD2200F609	220 1/6W 5 TA52

LOCA. NO	PART NO	DESCRIPTION
R904	0RD2200F609	220 1/6W 5 TA52
R905	0RD2200F609	220 1/6W 5 TA52
R907	0RS1801H609	1.8K 1/2W 5 TA52
R908	0RS1801H609	1.8K 1/2W 5 TA52
R909	0RS1801H609	1.8K 1/2W 5 TA52
R911	0RD2204H609	2.2M 1/2W 5 TA52
RA07	0RD3902F609	39K 1/6W 5 TA52
RA11	0RD3902F609	39K 1/6W 5 TA52
RA20	0RD4700F609	470 1/6W 5 TA52
RA21	0RD4700F609	470 1/6W 5 TA52
RA22	0RD5600F609	560 1/6W 5 TA52
RA23	0RD4700F609	470 1/6W 5 TA52
RA30	0RD2700F609	270 1/6W 5 TA52
RA33	0RD1202F609	12K 1/6W 5 TA52
RA34	0RD1000F609	100 1/6W 5 TA52
VR01	180-F03M	EVN-DJAY03 B204
SPARK GAP		
SG901	165-004A	SPARK GAP,AG20PT 152F-L3N/S-23
SG902	165-004A	SPARK GAP,AG20PT 152F-L3N/S-23
SG903	165-004A	SPARK GAP,AG20PT 152F-L3N/S-23
SG904	165-004A	SPARK GAP,AG20PT 152F-L3N/S-23
SWITCH		
P03	6600RPY001B	SWITCH,DETECTOR MMS00420ZMBO 5V 1MA VE
SW01	6600RDB004C	SWITCH,DETECTOR MPU10252MLB4 5V 0.01A
SW02	140-315C	SWITCH,TACT 4LEAD EVQPB905X
SW03	140-315C	SWITCH,TACT 4LEAD EVQPB905X
SW04	140-315C	SWITCH,TACT 4LEAD EVQPB905X
SW05	140-315C	SWITCH,TACT 4LEAD EVQPB905X
SW06	140-315C	SWITCH,TACT 4LEAD EVQPB905X
SW07	140-315C	SWITCH,TACT 4LEAD EVQPB905X
SW08	140-315C	SWITCH,TACT 4LEAD EVQPB905X
SW09	140-315C	SWITCH,TACT 4LEAD EVQPB905X
SW10	140-315C	SWITCH,TACT 4LEAD EVQPB905X
SW11	140-313B	SWITCH,TACT 2LEAD 160G(TA)
SW12	140-313B	SWITCH,TACT 2LEAD 160G(TA)
SW13	140-313B	SWITCH,TACT 2LEAD 160G(TA)
SW14	140-313B	SWITCH,TACT 2LEAD 160G(TA)
⚠ SW851	6600VM1001A	SWITCH,PUSHSDKLA1 UL/CSA 250V 5A VER
FILTER & CRYSTAL		
F100	166-B02C	FILTER,SFSH5.5MCB-TF21 5.5MHZ
F101	166-B02E	FILTER,SFSH6.5MCB-TF21 6.5MHZ
F102	166-B02D	FILTER,SFSH6.0MCB-TF21 6.0MHZ
L100	166-F01G	FILTER,DSS306-93FZ103N MURATA 100V
T100	166-C06A	FILTER,TRAP MKT40.9MA110P-TF01
T101	166-C06D	FILTER,TRAP MKT40.4MA110P-TF01
T102	166-C06D	FILTER,TRAP MKT40.4MA110P-TF01
T500	166-C02C	FILTER,TRAPTPS5.5MB-TF21 5.5MHZ
Z100	166-A01B	FILTER,OFWK3953M 37.4MHZ
“	6200VQS001M	FILTER,OFWG3963M
Z101	6200VQS001D	FILTER,SAW OFWK9260M 38.9MHZ

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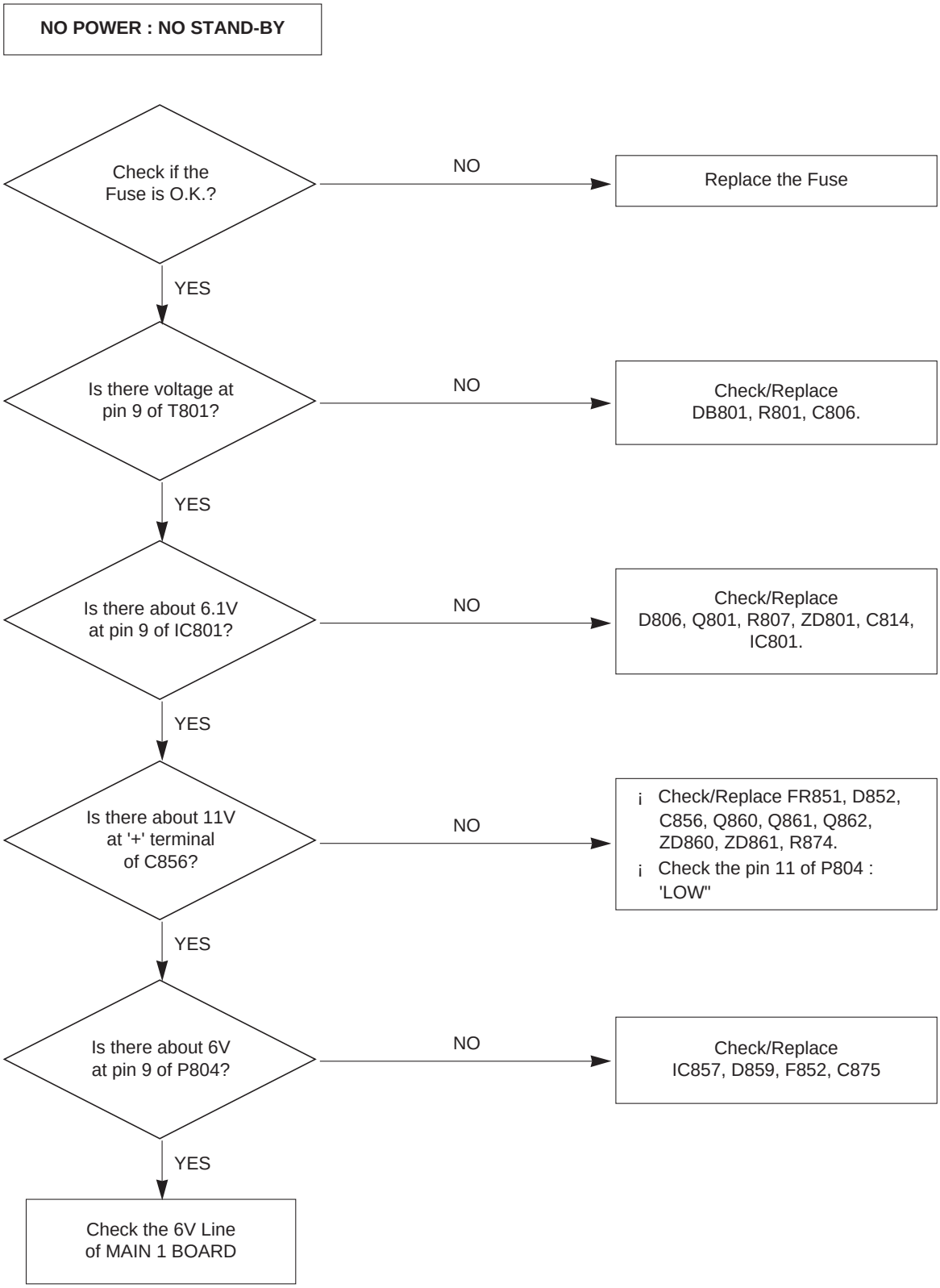
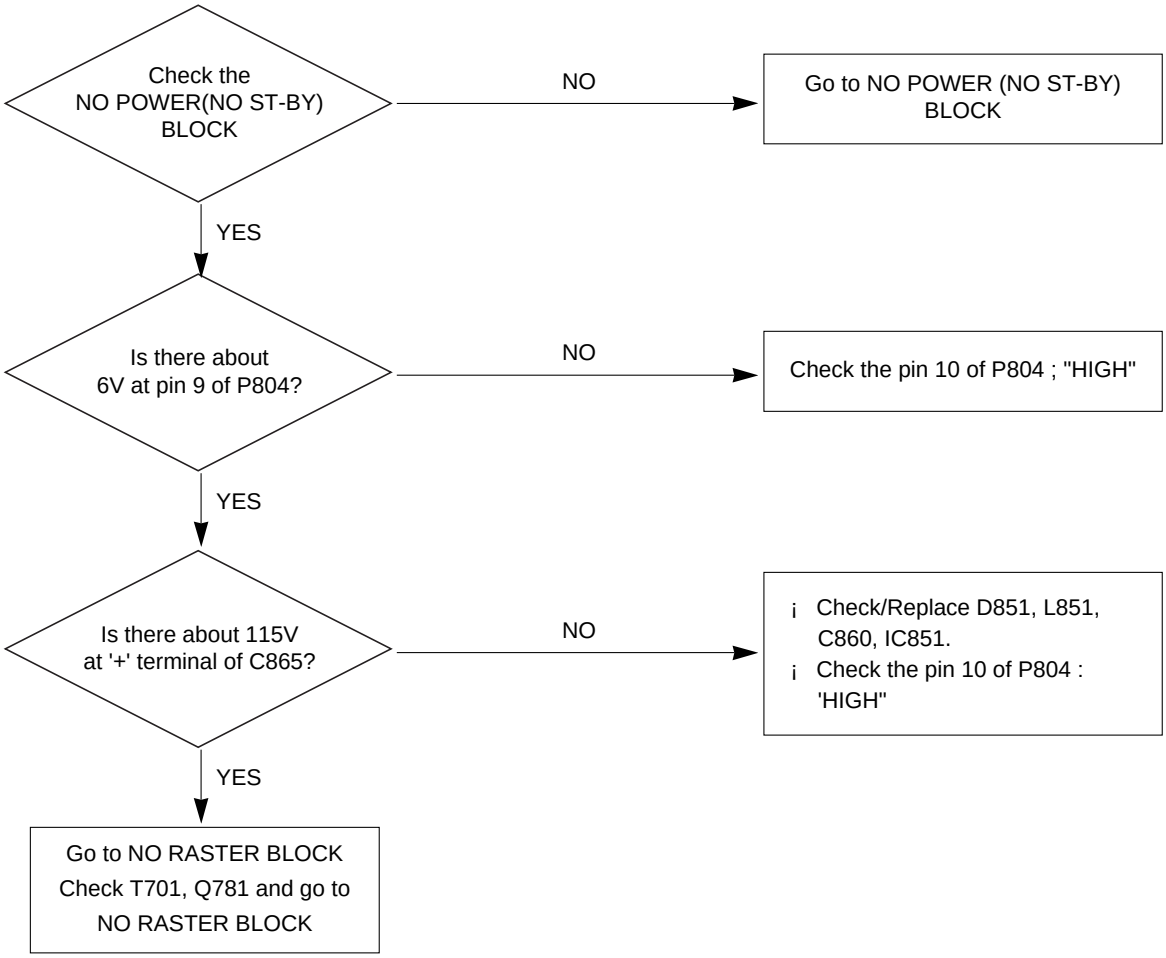
LOCA. NO	PART NO	DESCRIPTION
Z102	166-A01L	FILTER,OFWL9453M
X01S	156-A01X	CRYSTAL,HC49U RADIAL 4.286MHZ 30PP
X01	156-A08A	CRYSTAL,HC49U RADIAL 32.768KH
X02	156-A01T	CRYSTAL,HC49U RADIAL 10.000MHZ
X301	6202R1443AC	CRYSTAL,X-TAL 4.433709M 15PPM SER KJE
X500	156-A01C	CRYSTAL,HC49U RADIAL 3.579545MHZ
X501	156-A01V	CRYSTAL,HC49U RADIAL 4.433619MHZ
X502	156-A01C	CRYSTAL,HC49U RADIAL 3.579545MHZ
TELETEXT PARTS		
C04T	0CE107DF618	100UF STD 16V M
C05T	0CC3300K415	33P 50V J
C06T	0CC3300K415	33P 50V J
C07T	0CE106DF618	10UF STD 16V M
C08T	0CQ3332K439	0.0330UF S 50V J
C10T	0CE107DF618	100UF STD 16V M
C11T	0CN1030F679	10000P 16V M
C12T	0CE107DF618	100UF STD 16V M
C23T	0CE476DF618	47UF STD 16V M
C24T	181-007G	ECQ-V1H334JZ3(TR),50V 0.3
IC01T	0ISM545400A	IC,SDA5454-B001 52P SDIP BK TXT T
IC03T	0ISS753300A	IC,KA7533Z RESET T0-92 TP 3.3V
L01T	0LA0102K119	INDUCTOR,10UH K
L02T	0LA0102K119	INDUCTOR,10UH K
L03T	0LA0102K119	INDUCTOR,10UH K
L08T	0LA0102K119	INDUCTOR,10UH K
Q01T	0TR387500AA	TR,2SC3875S(ALY) KEC
Q02T	0TR387500AA	TR,2SC3875S(ALY) KEC
Q03T	0TR387500AA	TR,2SC3875S(ALY) KEC
Q04T	0TR102009AG	TR,KRC102S SOT-23 TP KEC
R01T	0RD1000F609	100 1/6W 5 TA52
R02T	0RD1000F609	100 1/6W 5 TA52
R05T	0RN2702F409	27K 1/6W 1% TA52
X01T	156-A01L	CRYSTAL,STANDARD HC49U 6.000MHZ
ACCESSORIES		
A1	3828VA0190L	MANUAL,OWNERS FS 5 BRAND NO FR 032
A1	3828VA0190D	MANUAL,OWNERS UK,LG,EN 032C
A1	3828VA0190G	MANUAL,OWNERS ES LG SP/PO
A1	3828VA0190K	MANUAL,OWNERS JP/AG LG DA
A2	6710V00032J	REMOTE CONTROLLER,NO BRAND
A2	6710V00032C	REMOTE CONTROLLER,W/O TXT
A2	6710V00032E	REMOTE CONTROLLER,W/TXT,1 TUNER
A3	132-210H	ANTENNA,ROD W/ADAPTER L=650
A3	132-210G	ANTENNA,ROD W/ADAPTER L=500
MISCELLANEOUS		
	303-F62A	COVER,TUNER
	879-019K	CABLE ASSY,FFCFFC 7PX100MM (P=1.25)
JK01	6613V00009B	JACK ASSY,PMJ015B W/O E/P+A/V
JK601	380-400A	JACK,EARPHONE HEADPHONE 3.5 STEREO
RC01	6726VV0006B	PRE-AMP,TSOP1838ON1 TEMIC 38.0KHZ
S01	6500RAB002A	SENSOR,GP1S566 SHARP D-33 REEL SENSOR

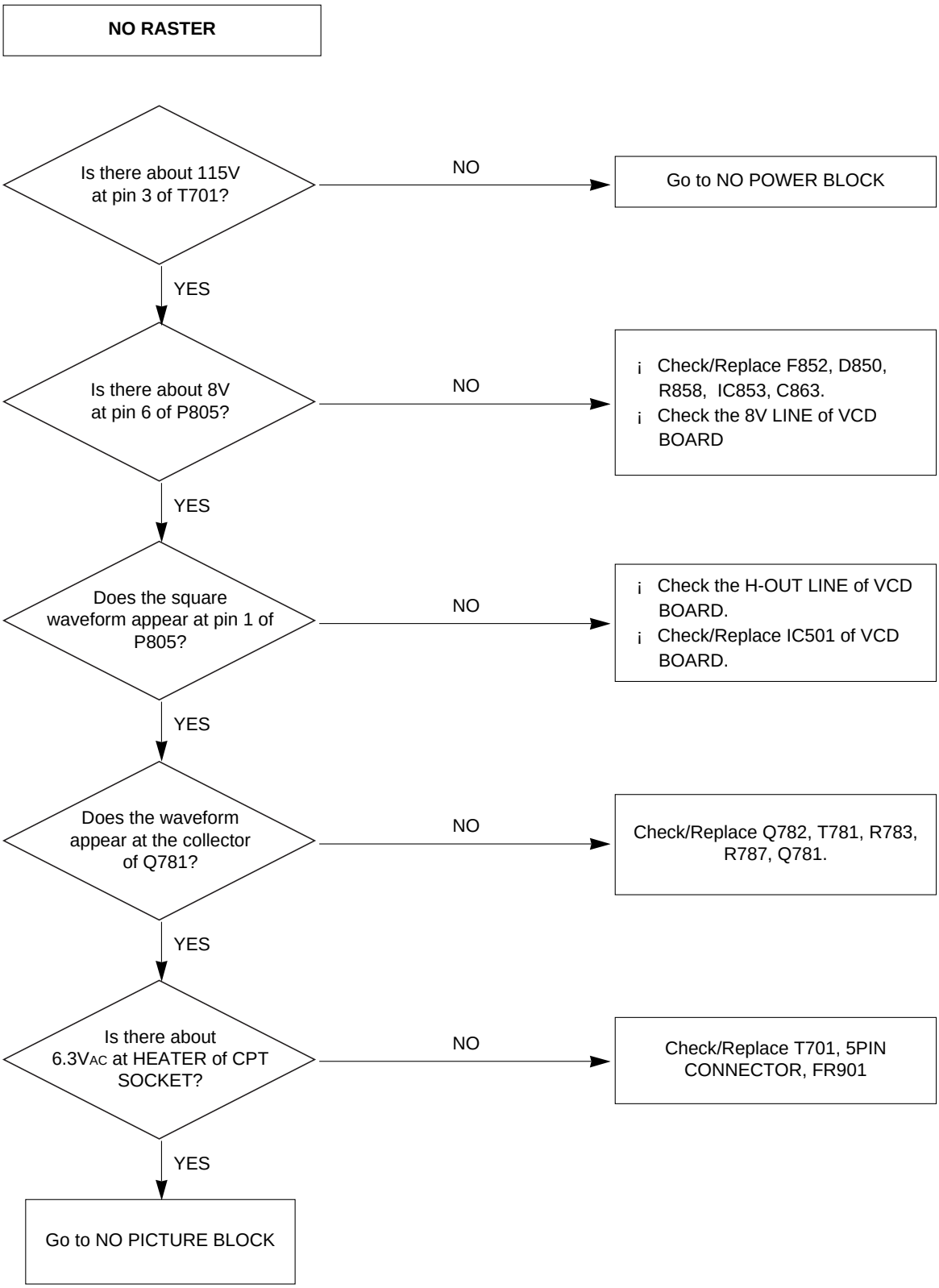
LOCA. NO	PART NO	DESCRIPTION
S02	6500RAB002A	SENSOR,GP1S566 SHARP D-33 REEL SENSOR
S03	4930V00090A	HOLDER,END SENSOR ASSY(33 DECK)
S04	4930V00090A	HOLDER,END SENSOR ASSY(33 DECK)
SK200	381-091A	SOCKETS-091A URIM ELECTRNICS 21
⚠ SK901	6620VBC001A	SOCKET,CPT 29.1 PHI SINGLE(PCS629-03A)
⚠ SK902	6620VBA001A	SOCKET,CPT PCS-633A
⚠ TH801	163-051F	THERMISTOR,PTC J503P84D140M290Q
TU100	6700VPF005A	TUNER,TU8PSD01DB PAL DIN BG/L 3
TU100	6700VPF005C	TUNER,TAEC-G022D
VA801	164-003D	VARISTOR,SVC 561D-14A

TROUBLE SHOOTING

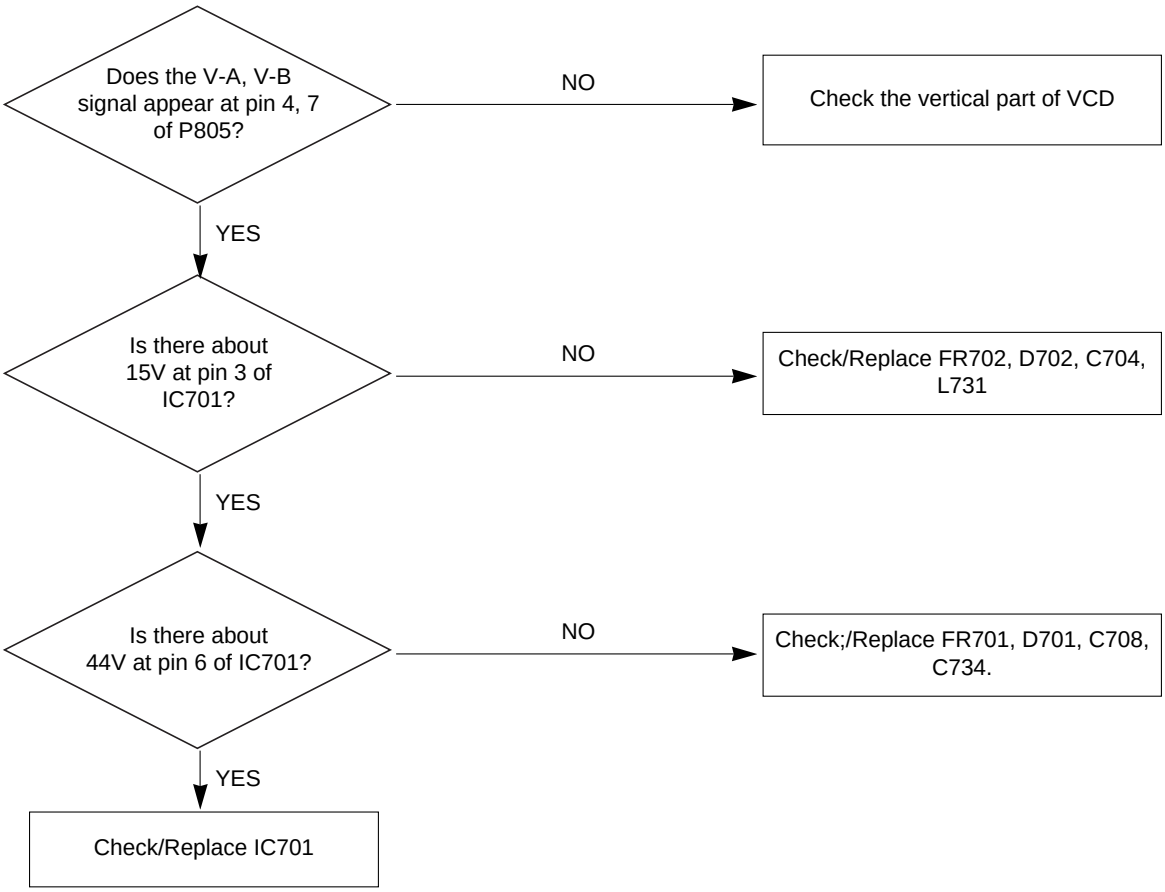

NO POWER : NO STAND-BY
Check if the Fuse is O.K.?
NO
Replace the Fuse
YES
Is there voltage at pin 9 of T801?
NO
Check/Replace DB801, R801, C806.
YES
Is there about 6.1V at pin 9 of IC801?
NO
Check/Replace D806, Q801, R807, ZD801, C814, IC801.
YES
Is there about 11V at '+' terminal of C856?
NO
¡ Check/Replace FR851, D852, C856, Q860, Q861, Q862, ZD860, ZD861, R874.
¡ Check the pin 11 of P804 : 'LOW"
YES
Is there about 6V at pin 9 of P804?
NO
Check/Replace IC857, D859, F852, C875
YES
Check the 6V Line of MAIN 1 BOARD

NO POWER : NO MONITOR ON

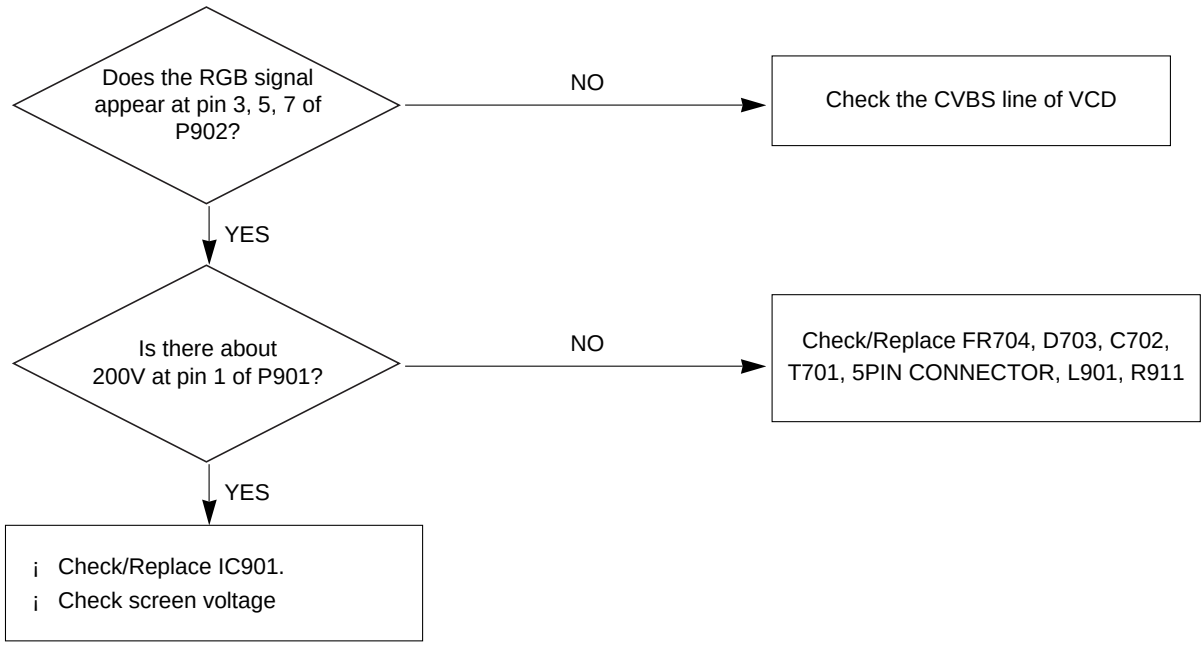


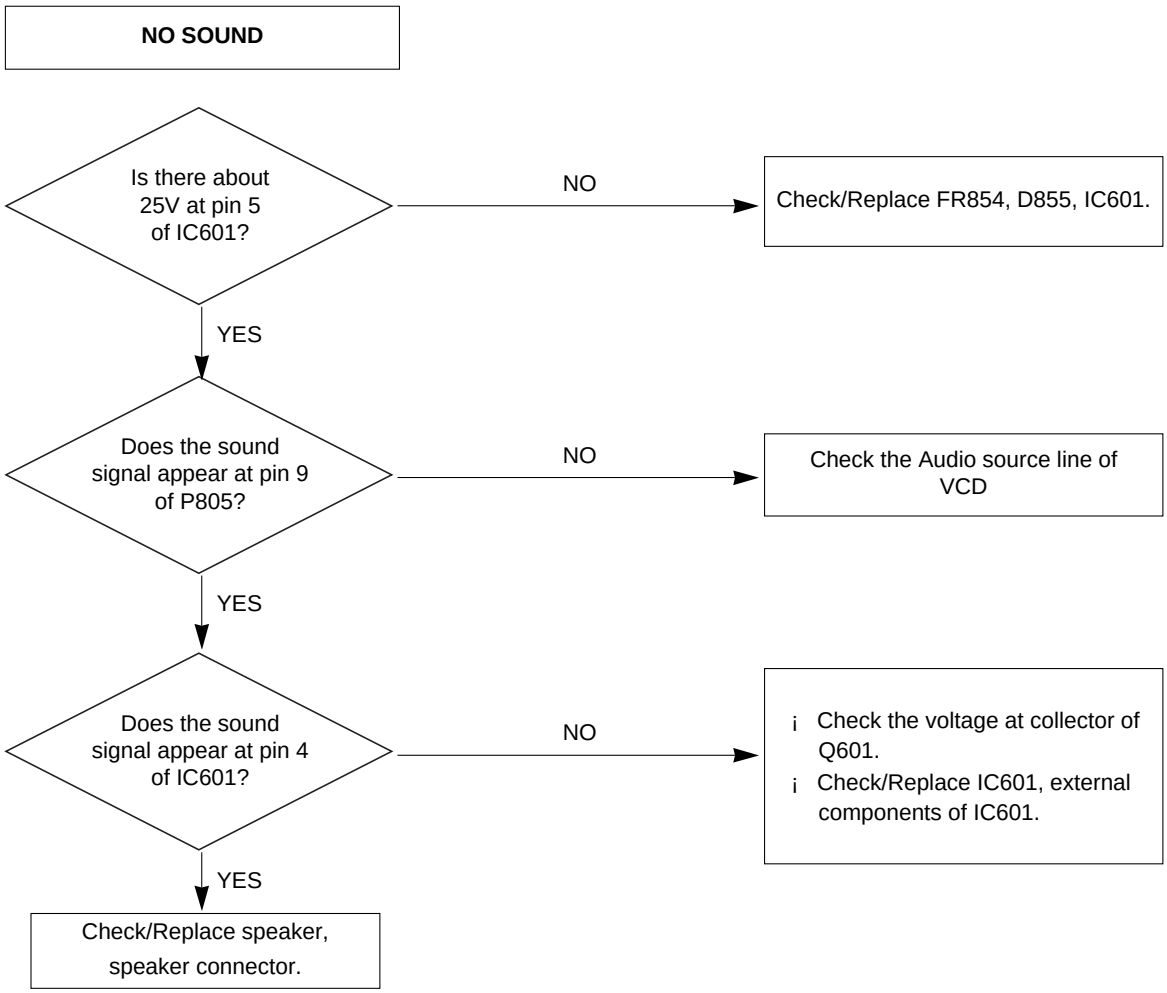

NO RASTER
Is there about 115V at pin 3 of T701?
NO
Go to NO POWER BLOCK
YES
Is there about 8V at pin 6 of P805?
NO
¡ Check/Replace F852, D850, R858, IC853, C863.
¡ Check the 8V LINE of VCD BOARD
YES
Does the square waveform appear at pin 1 of P805?
NO
¡ Check the H-OUT LINE of VCD BOARD.
¡ Check/Replace IC501 of VCD BOARD.
YES
Does the waveform appear at the collector of Q781?
NO
Check/Replace Q782, T781, R783, R787, Q781.
YES
Is there about 6.3VAC at HEATER of CPT SOCKET?
NO
Check/Replace T701, 5PIN CONNECTOR, FR901
YES
Go to NO PICTURE BLOCK

V. Deflection ERROR


Does the V-A, V-B signal appear at pin 4, 7 of P805?
NO
Check the vertical part of VCD
YES
Is there about 15V at pin 3 of IC701?
NO
Check/Replace FR702, D702, C704, L731
YES
Is there about 44V at pin 6 of IC701?
NO
Check;/Replace FR701, D701, C708, C734.
YES
Check/Replace IC701

NO PICTURE


Does the RGB signal appear at pin 3, 5, 7 of P902?
NO
Check the CVBS line of VCD
YES
Is there about 200V at pin 1 of P901?
NO
Check/Replace FR704, D703, C702, T701, 5PIN CONNECTOR, L901, R911
YES
¡ Check/Replace IC901.
¡ Check screen voltage


NO SOUND
Is there about 25V at pin 5 of IC601?
NO
Check/Replace FR854, D855, IC601.
YES
Does the sound signal appear at pin 9 of P805?
NO
Check the Audio source line of VCD
YES
Does the sound signal appear at pin 4 of IC601?
NO
¡ Check the voltage at collector of Q601.
¡ Check/Replace IC601, external components of IC601.
YES
Check/Replace speaker, speaker connector.

CIRCUIT DIAGRAM OF MV-995A

P/No. : 3854VA0060A
Date : 1999.7.15

P500
TO CPT BOARD P2902

P501A
FROM MAIN2 P805

IC500
TDA8841/8842

VCD

IC100 U4488B

IC101
CD4052B

IF

IC200 LA7016

IC201
LA7016

AV S/W

IC300

Y/C

IC01S TA1238N

SECAM DECODER

IC01
SDA5457

TXT

IC03
KA75332

IC02
AT24C16

RC01
RECEIVER

IC202 W/SCART

IC04
KA7533Z

SERVO

IC05
LB1645N

IC06
35041-075FP

OSD

SYS & CON

SK200

JK202

JK201

KEY_BOARD

P01 P04 P03 P04 P805A FROM MAIN2 P805

P301 P302 P303

CDR NBR	OPTION	
D00	SYSTEM	0-L/L'BG X-BG-DK-I
D01	SECAM/MESECAM	0-DEL X-ADD
D02	SP/LP	0-SP ONLY X-SP/LP
D03	TEXT	0-DEL X-ADD
D04	VPS/PDC	
D05	NC	

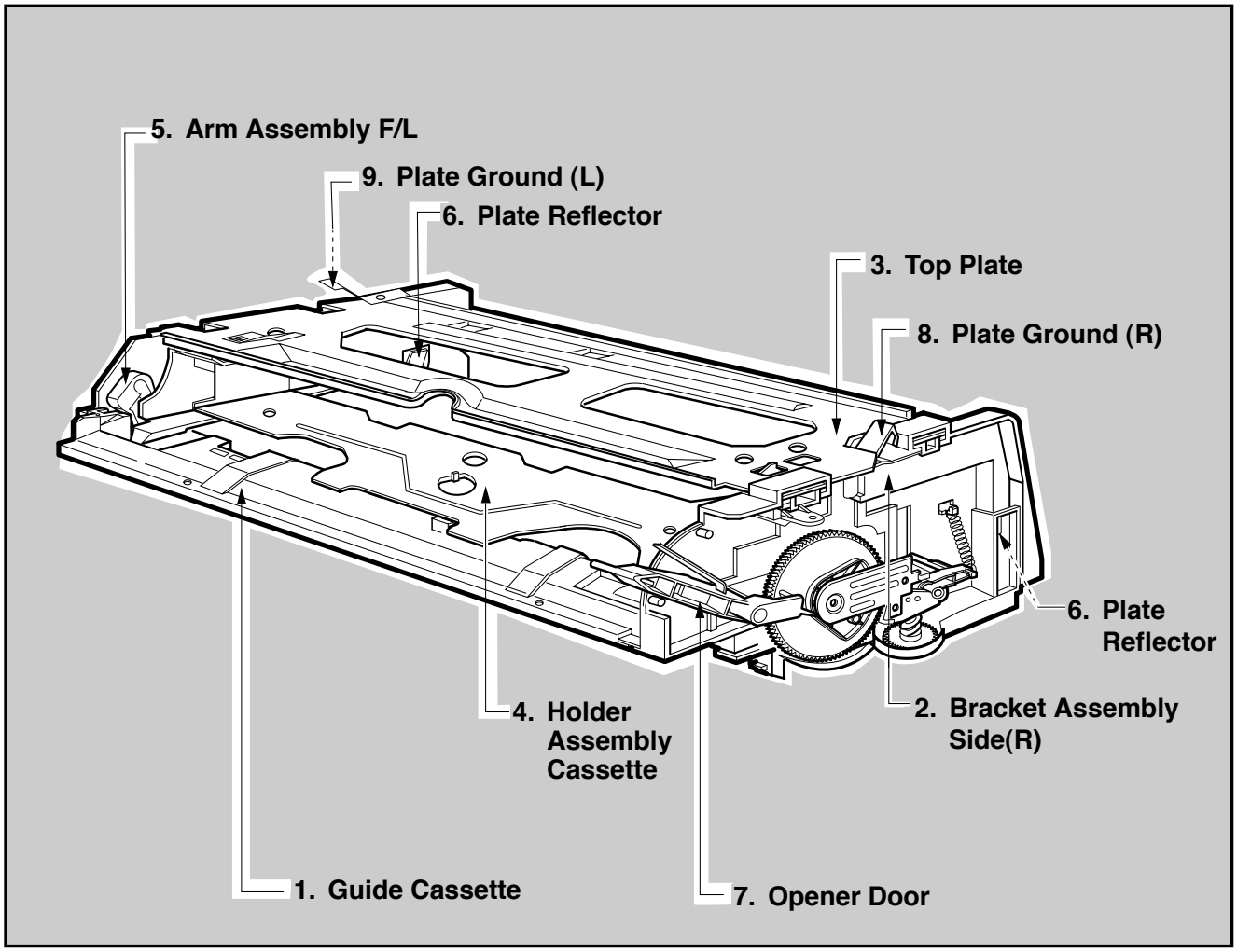
SYSTEM	S0	S1
B/G	1	1
I	0	0
D/K	0	1

	① 2.8Vp-p 1KHZ	② 2Vp-p	③ 220mVp-p	④ 28Vp-p 15.75KHZ	⑤ 1.7Vp-p	⑥ 5Vp-p 15.75KHZ	⑦ 5Vp-p 60HZ	⑧ 0.2Vp-p	⑨ 1.4Vp-p	⑩ 4.4Vp-p	⑪ 3.2Vp-p	⑫ 4.0Vp-p	⑬ 7Vp-p
WAVEFORMS V/C IC 402		P2N21(PB) 500mVpp	P2N31(PB) 500mVpp	P2N41(REC) 500mVpp	P2N51(REC) 500mVpp	P2N61(REC) 1.0Vpp	P2N81(PB) 400mVpp	P2N11(PB) 350mVpp	P2N141(REC) 360mVpp	P2N171(PB) 550mVpp	P2N181(PB) 480mVpp	P2N211(PB) 200mVpp	P2N251(PB) 4.2Vpp	P2N28 2Vpp	P2N30 5.0Vpp	P2N31 1.0Vpp	P2N341(REC) 1.2Vpp	P2N351(PB) 420mVpp	P2N351(PB)1500mVpp

PB.V
PB.A
REC.V
REC.A

FRONT LOADING MECHANISM DISASSEMBLY

¡ Front Loading Mechanism Assembly, Parts Location



¡ **Component list below will be discribed as if the top and bottom covers, front panel and deck mechanism assembly have already been removed.**

1. Guide Cassette
2. Bracket Assembly Side (R)
3. Top Plate
4. Holder Assembly Cassette
5. Arm Assembly F/L
6. Plate Reflector
7. Opener Door
8. Plate Ground(R)
9. Plate Ground(L)

FRONT LOADING MECHANISM DISASSEMBLY

1. Front Loading Mechanism Assembly (Fig. A-1)

1) Remove the Top and Bottom Covers and Front Panel.
2) Remove two screws(A).
3) Lift up the Front Loading Mechanism Assembly in the direction of arrow(B).

NOTE

When disassembling and reassembling:
a. Give special attention to removal and to reassembly because two tabs(L), (R) are engaged.

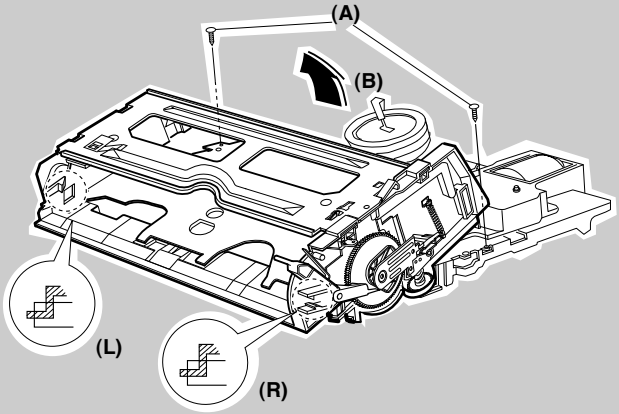


Fig. A-1 Front Loading Mechanism

2. Guide Cassette (Fig. A-2)

1) Push tab(R) of the Cassette Guide and disengage with Bracket Side(R) and push tab(L) of the cassette Guide which is engaged with Bracket Side(L) and remove it in the direction of arrow (B).

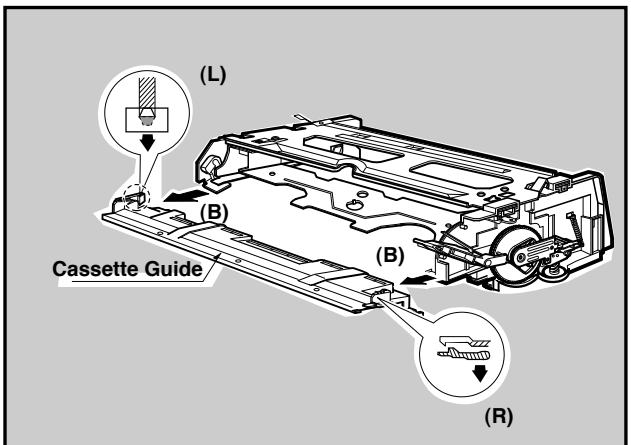


Fig. A-2 Guide Cassette

3. Bracket Assembly Side)(R (Fig. A-3)

1) Push the tabs(L), (R) of Bracket Assembly Side(R) to disengage with the Top Plate and remove it in the direction of arrow(A).

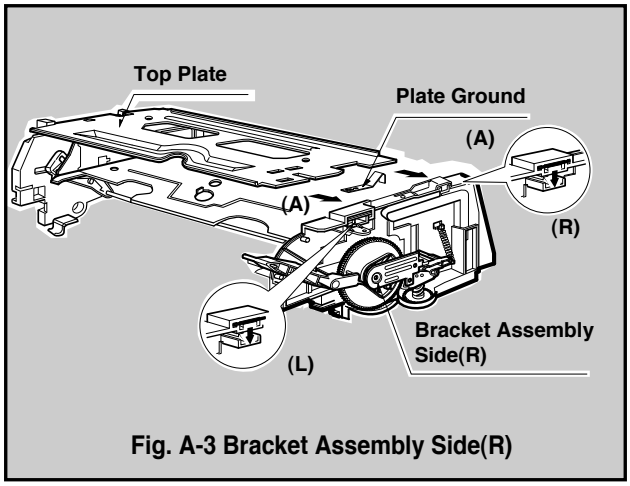


Fig. A-3 Bracket Assembly Side(R)

4. Bracket Side(L)/Top Plate (Fig. A-4)

1) Remove the screw(B).
2) Remove the plate Ground(L), in the direction of arrow(A).
3) Push the locking tab(L1) and then remove the Bracket Side(L) in the direction of arrow(B).
4) The Top Plate can be removed by Separating the Bracket Side(L).

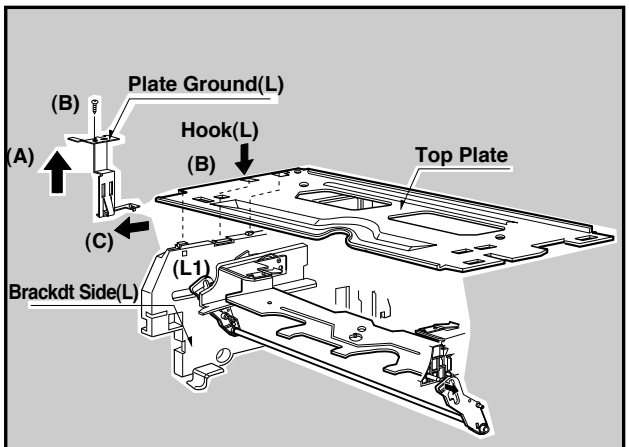


Fig. A-4 Bracket Side(L)/Top Plate

FRONT LOADING MECHANISM DISASSEMBLY

5. Holder Assembly Cassette (Fig. A-5)

1) Separate the Bracket Assembly Side(R).
2) Push the two lever tabs(L), (R) down and separate the Holder Assembly Cassette and the Arm Assembly F/L from the Top Plate.

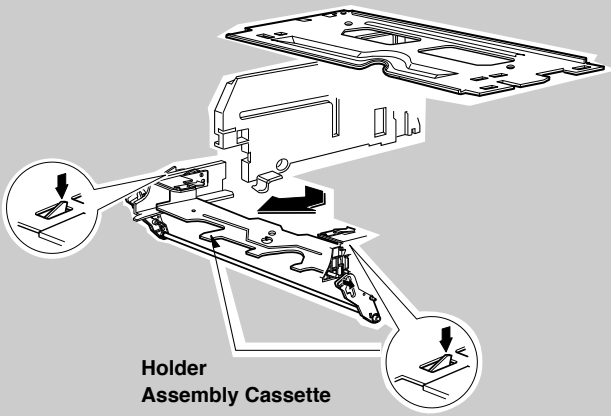


Fig. A-5 Holder Assembly Cassette

6. Arm Assembly F/L (Fig. A-6)

1) Remove by pulling the Arm F/L(R) from the Bracket Holder(R) Boss in the direction of arrow(A).
2) Separate the Arm Assembly F/L from Cassette Holder Boss in the direction of arrow(B).

NOTE

When disassembling and reassembling:
a. Be sure to remove the Arm F/L(R) first. If not the Arm Assembly F/L can be damaged.

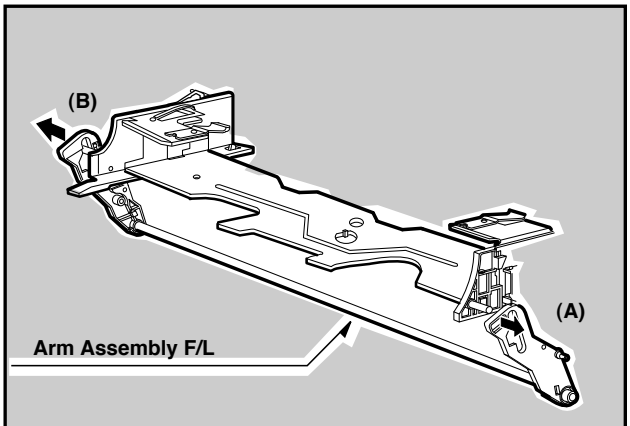


Fig. A-6 Arm Assembly F/L

7. Spring Stopper (Fig. A-7)

1) Remove the Spring Stopper which is connected to the tabs(A), (B) of the Lever Stopper(R) and the Bracket Holder(R).

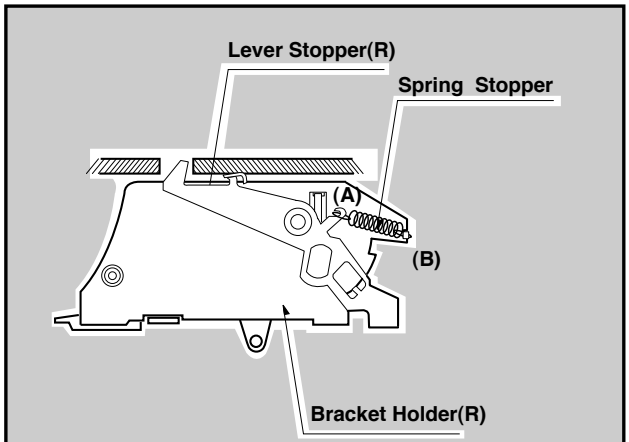


Fig. A-7 Spring Stopper

8. Plate Reflector (Fig. A-8)

1) Detach the Plate Reflector(L) from the Bracket Side(L) by using a knife.
2) Detach the Plate Reflector(R) from the Bracket Assembly Side(R) by using a knife.

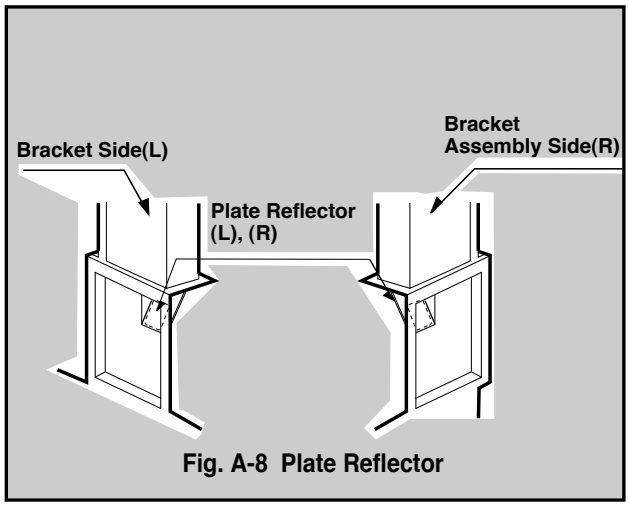
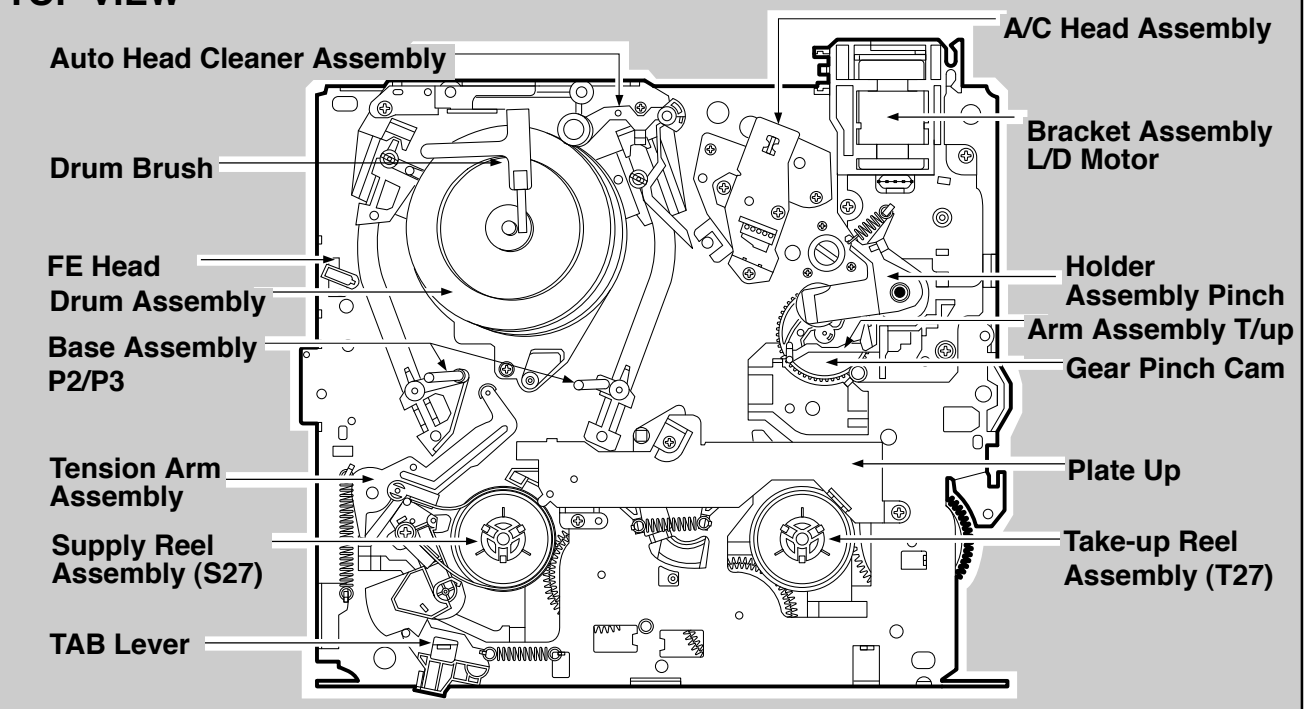


Fig. A-8 Plate Reflector

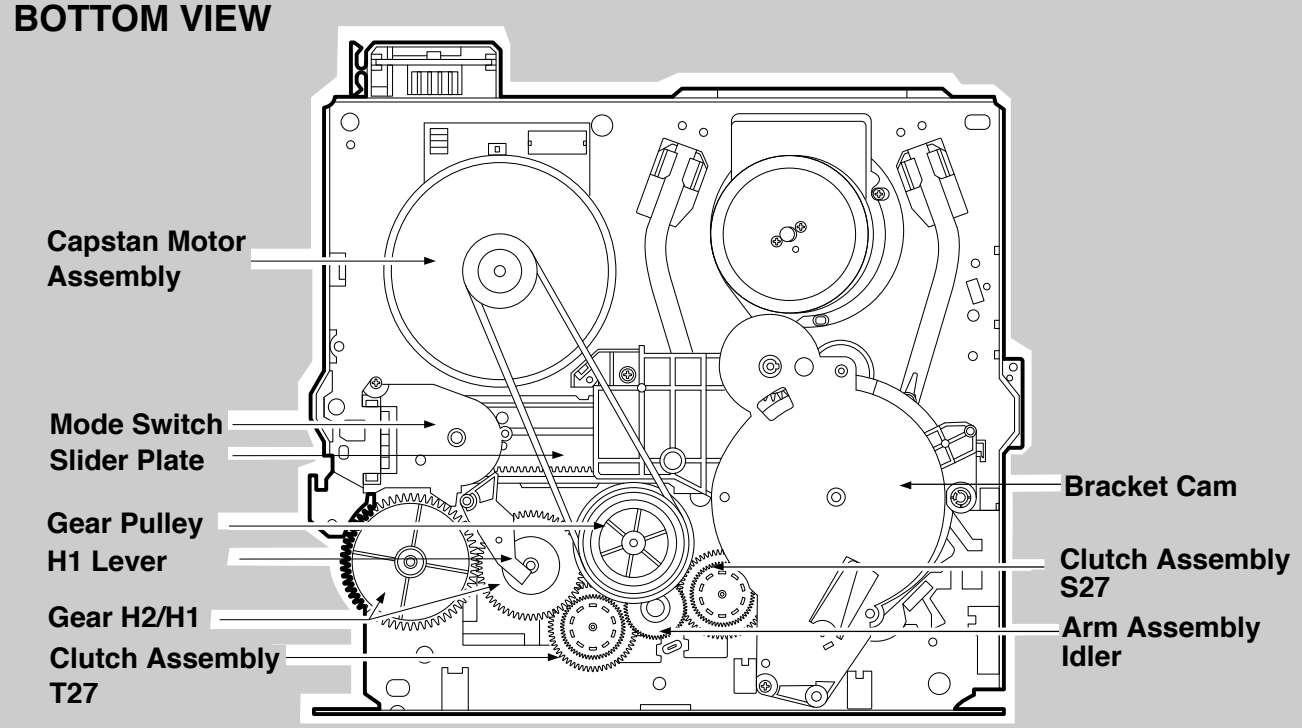
DECK MECHANISM DISASSEMB Y

* Deck Mechanism Parts Location

TOP VIEW



BOTTOM VIEW



DECK MECHANISM DISASSEMB Y

1. Auto Head Cleaner Assembly (Fig. B-1)

(Optional Item)

1) Push the tab(A) of Auto Head Cleaner and remove the Cleaner Arm Assembly.

NOTES:

When disassembling and reassembling:

a. Do not allow fingers or tools to touch the outside of the Drum.

b. Be careful not to get any foreign substance on the Roller.

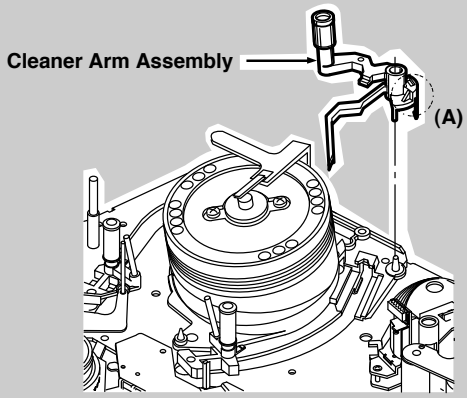


Fig. B-1 Auto head cleaner Assembly

2. Drum and Base Assembl (Fig. B-2)

1) Remove the Auto Head Cleaner Assembly. (option)
2) Remove three screws(A) and separate the Drum Assembly, Drum Base and the Drum Brush from the Deck Mechanism Assembly.
3) Remove three screws(B) on the back side and remove the Drum Assembly from the Drum Base.

NOTES:

When disassembling and reassembling:

a. Do not touch the video tips with fingers or tools.
Give special attention to disassembling and reassembling of Auto Head Cleaner Assembly.

b. After assembling, adjust the tape transport system and Servo PG.

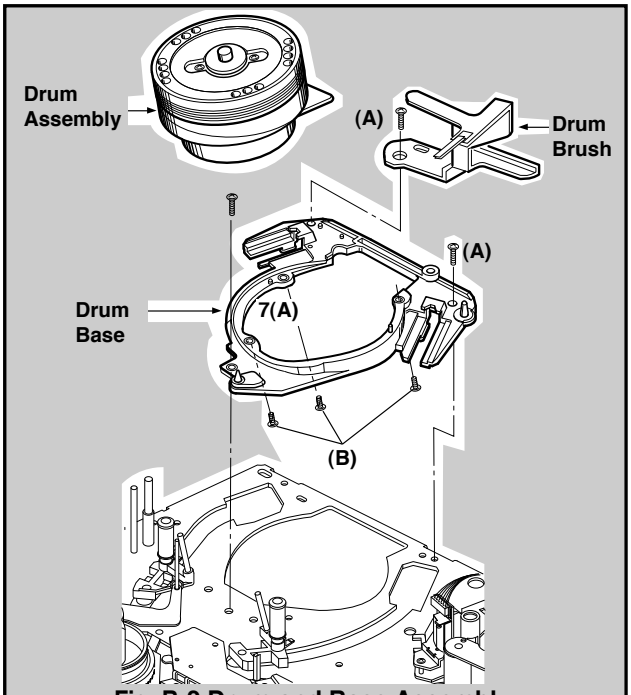


Fig. B-2 Drum and Base Assembly

3. Drum Sub Assembly and Motor Assembly (Fig. B-3-1)

1) Remove the Drum Base from the Deck Mechanism Assembly.
2) Separate the Drum Assembly from the Drum Base.
3) Remove two screws(A) and then remove the rotor.
4) Remove three screws(B) and then remove the stator.

NOTE

When disassembling and reassembling:

a. Do not touch the video tips with fingers or tools.

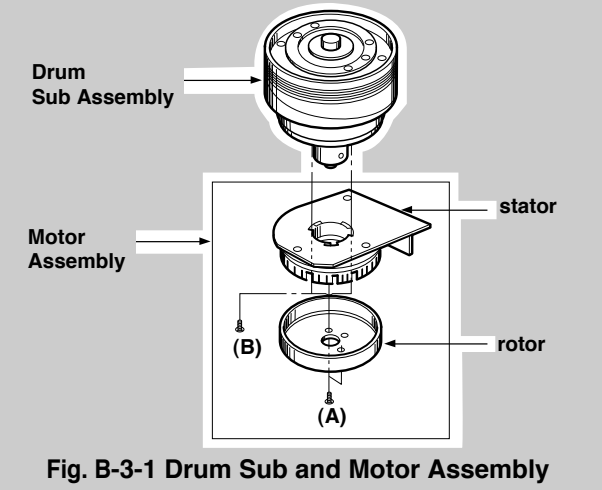


Fig. B-3-1 Drum Sub and Motor Assembly

4. A/C (Audio/Control) Head Assembly (Fig. B-4)

1) Unplug the A/C connector from the Loading Motor P.C.B.
2) Remove two screws(A) and remove the A/C Head Assembly from the Deck Mechanism Assembly.

NOTES:

When disassembling and reassembling:

a. When assembling, the 3mm hole of the Base A/C should coincide to 3mm hole in the Chassis.
b. Do not touch the A/C Head Tips with fingers or tools.
c. After reinstalling the Audio Control Head Assembly, adjust the Tilt, Azimuth and Height of A/C Head.

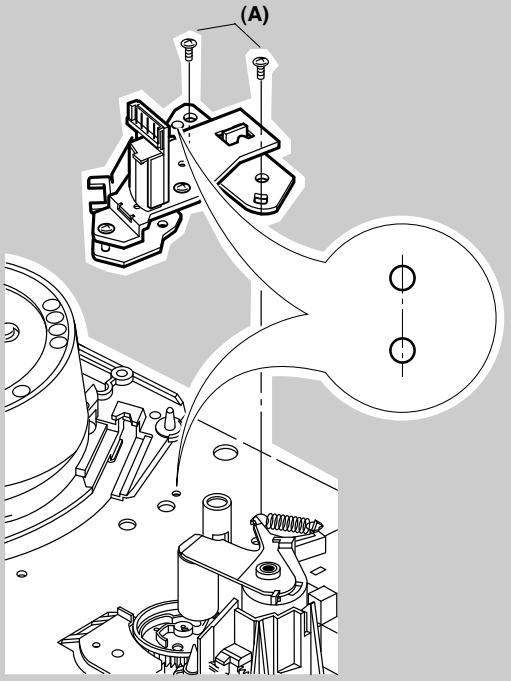


Fig. B-4 A/C Head Assembly

5. FE (Full Erase) Head Assembl (Fig. B-5) (Optional Item)

1) Push two tabs(A) and remove the FE Head.

NOTE

When disassembling and reassembling:

a. Be careful not to get any foreign substance on the FE Head.

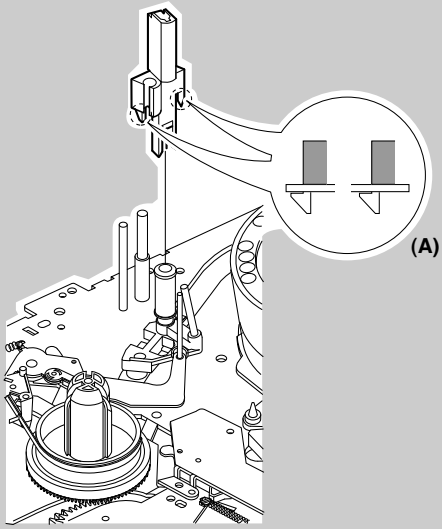


Fig. B-5 FE Head Assembly

6. Plate Up/Supply Main Brake/Take up Main Brake/Body Prism Led Assembly (Fig. B-6)

1) Plate Up
   a. Remove three screws(A) and remove the Plate Up.
2) Supply Main Brake
   a. Remove the Spring MB.
   b. Lift up the Supply Main Brake.
3) Take-Up Main Brake
   a. Lift up the Take-Up Main Brake.
4) Body Prism Led
   a. Remove the Body Prism Led.

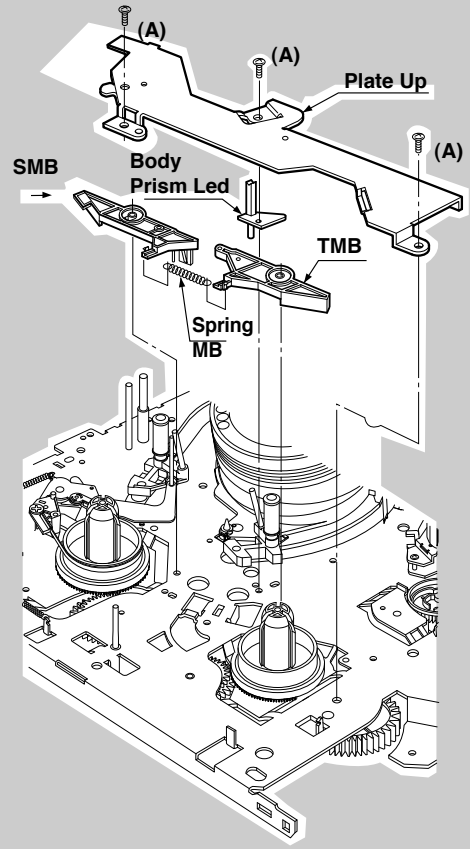


Fig. B-6 Plate up/SMB/TMB/BPL

7. Tension Arm/Lever Assembly Tension (Fig. B-7)

1) Remove the Spring Tension.
2) Push the tab(A) of the Base Tension on the back cover of the Deck Mechanism Assembly outward and remove the Tension Arm Assembly.
3) Push the tab(B) on the back side of the Holder Band(A) and remove the Tension Arm Assembly.
4) Push two tabs(C) on the bottom side of the Lever Tension and Lift up the Lever Assembly Tension.

NOTES:

When disassembling and reassembling:

a. (D) is engaged to the cam groove of the Gear Cam L/D and two tabs(C) are engaged in the chassis. (care must be taken not to damage the two tabs when disassembling and reassembling)

b. When disassembling, turn to the counterclockwise and lift up so that grease which may be on (D) is not transfered to the Reel Brake Drum.

c. When assembling, the 2.5mm hole of the Lever Assembly Tension should be aligned with the 2.5mm hole in the chassis.

d. After reassembling, adjust the Tension.

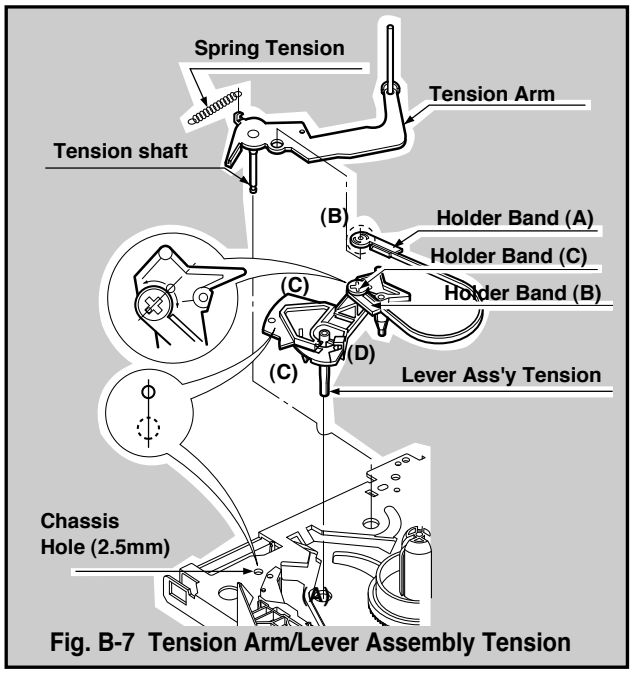


Fig. B-7 Tension Arm/Lever Assembly Tension

8. TAB Lever (Fig. B-8)

(Optional Item)

1) Remove the Lever Ass'y Tension.
2) Remove the Spring TAB.
3) Push the tab(A) on the bottom side of TAB Lever and remove the TAB Lever.

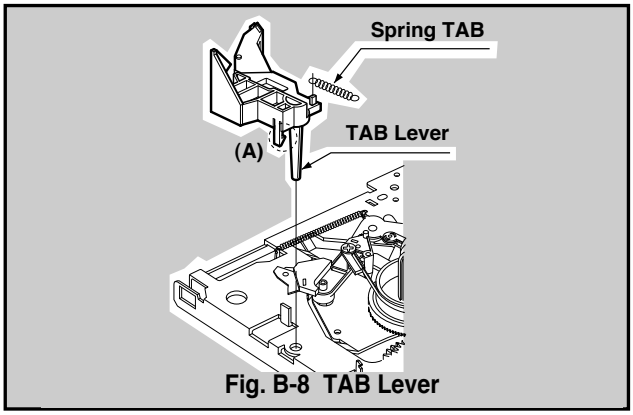


Fig. B-8 TAB Lever

9. Supply Reel/Take Up Reel Assembly (Fig. B-9)

1) Lift up Reel(S), (T) after removing the Plate Up and Band Assembly.

NOTES:

a. Be sure not to interchange the Take-up Reel and the Supply Reel.
b. Do not allow the Brake Drum to come in contact with grease.

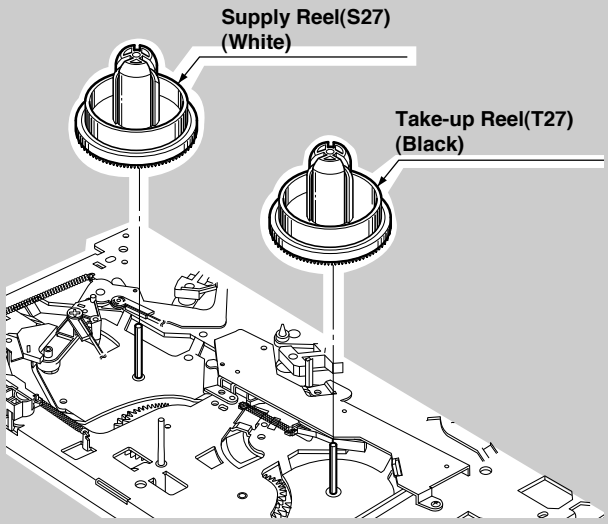


Fig. B-9 Supply Reel/Take-up Reel Assembly

10. Gear Pulley/Belt Capstan (Fig. B-10)

1) Turn over the Deck Mechanism Assembly.
2) Remove the Belt Capstan.
3) Remove the washer(A) and then lift up the Gear Pulley.

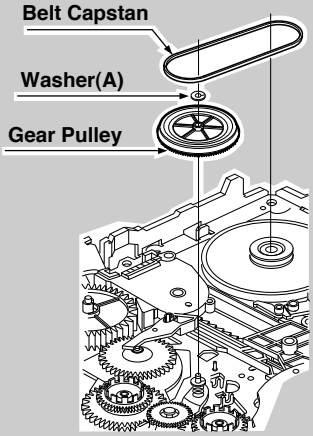


Fig. B-10 Gear Pulley/Belt Capstan

11. Gear H1, H2/Lever H1 (Fig. B-11)

1) Push and lift up the hook(B) of Lever H1.
2) Remove the washer(A) and then lift up the Gear H1.
3) Lift up the Spring H1.
4) Push and lift up the hook(B) of the Gear H2.

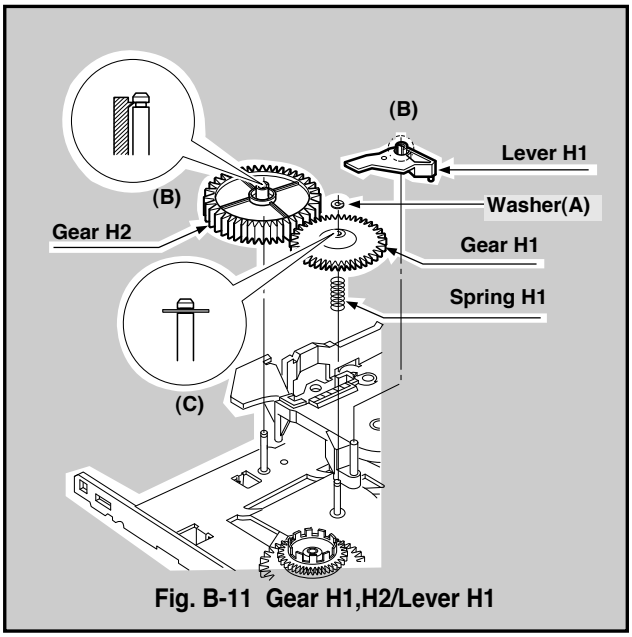


Fig. B-11 Gear H1,H2/Lever H1

12. Arm Assembly Idler (Fig. B-12)

1) Lift up the Gear Pulley after removing the washer(A).
2) Lift up the Spring Up/D after removing the washer(B).
3) Lift up the Arm Assembly Idler.

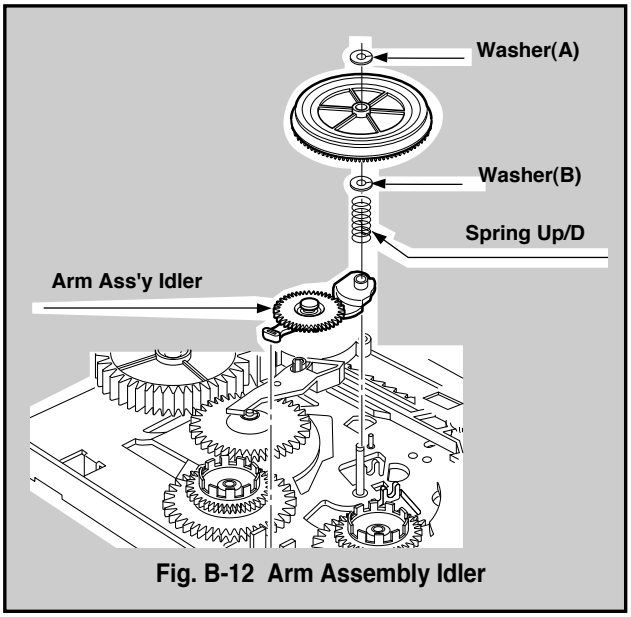


Fig. B-12 Arm Assembly Idler

13. Mode S/W (Fig. B-13)

1) Lift up the Lever H1.
2) Remove the screw(A) and lift up the Mode S/W.

NOTE

a. When assembling mode, the groove of Gear (∩) and Body (o) of the Mode Switch should be aligned.

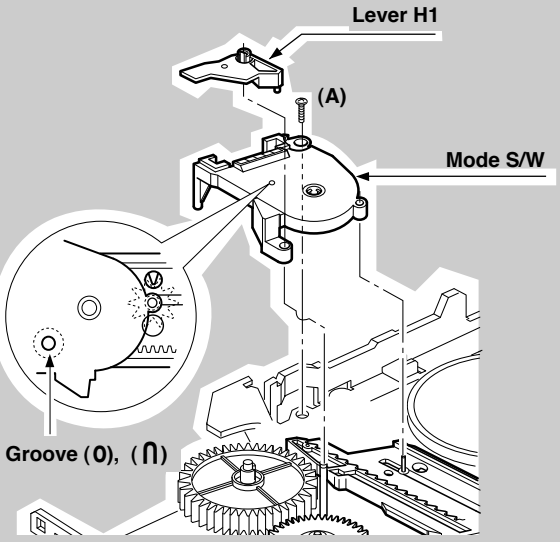


Fig. B-13 Mode S/W

14. Capstan Motor Assembly (Fig. B-14)

1) Remove three Screws(A) on the top side and remove the Capstan Motor Assembly.

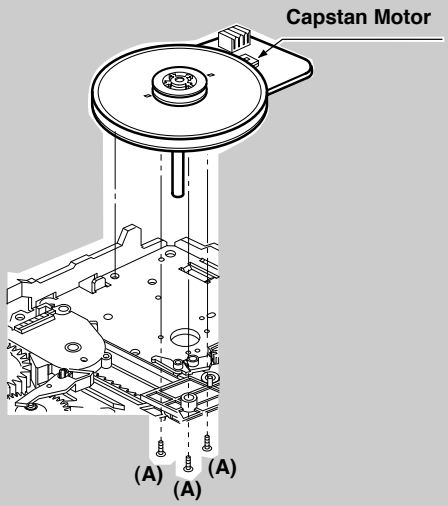


Fig. B-14 Capstan Motor Assembly

15. CAM Bracket Assembly (Fig. B-15)

1) Remove three screws(A).
2) Remove the CAM Bracket Assembly.

NOTE

a. The (Tension Shaft Holder) fixes the Tension Shaft on Fig B-7. therefore when the CAM Bracket Assembly is removed, First remove the Tension Arm on Fig B-7.

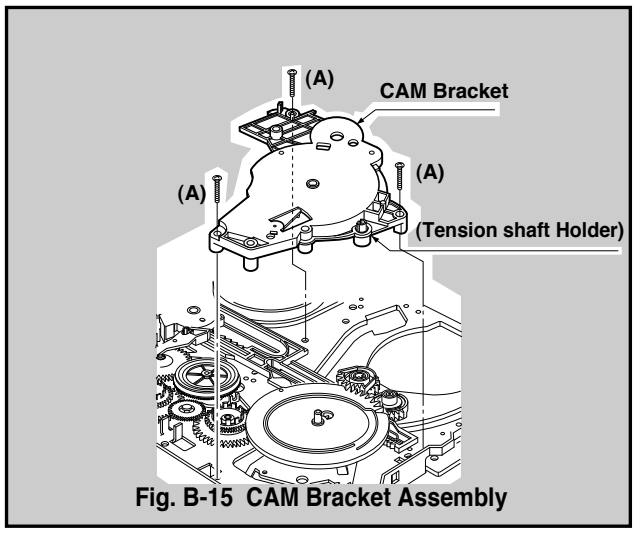


Fig. B-15 CAM Bracket Assembly

16. Cam Bracket/Lever Jog/Gear Jog (Fig. B-16) (Optional Item)

1) Remove the Cam Bracket Assembly.
2) Remove the Spring Jog.
3) Push the tab(A) and remove the Lever Jog.
4) Push the tab(B) and remove the Gear Jog.

NOTE

a. The tab(B) on the Gear Jog should be in groove of the Lever Jog.

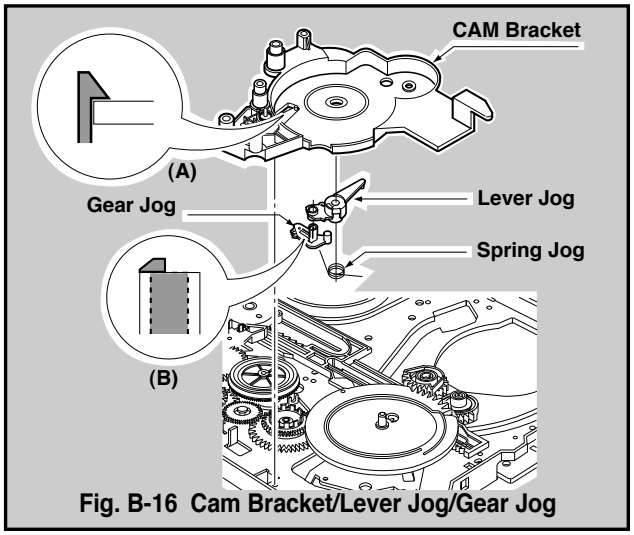


Fig. B-16 Cam Bracket/Lever Jog/Gear Jog

DECK MECHANISM DISASSEMB Y

17. Gear Cam L/D (Fig. B-17)

1) Remove the Cam Bracket Assembly.
2) Remove the Gear Cam L/D.

NOTE

1) When assembling the Gear Cam L/D, the groove (⋀⋀) of Plate Slider should coincide with to the groove (⋁) on the Gear Cam L/D.

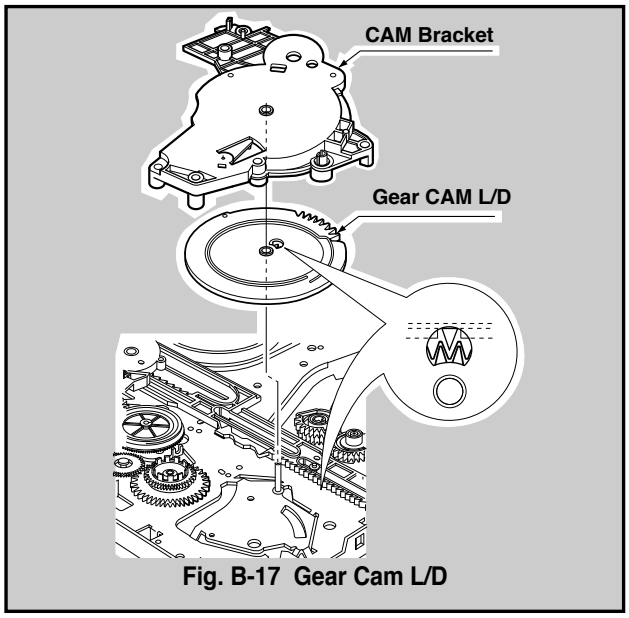


Fig. B-17 Gear Cam L/D

18. Gear PS/Plate Slide (Fig. B-18)

1) Remove two washers(C).
2) Remove the Plate Slider.
3) Remove the Gear PS.

NOTE

1) When the hole(A) of the Gear PS is aligned to the hole(B) of the chassis, the groove(⋁) of the Plate Slider should be aligned to the groove(⋀⋀) of the Gear PS.

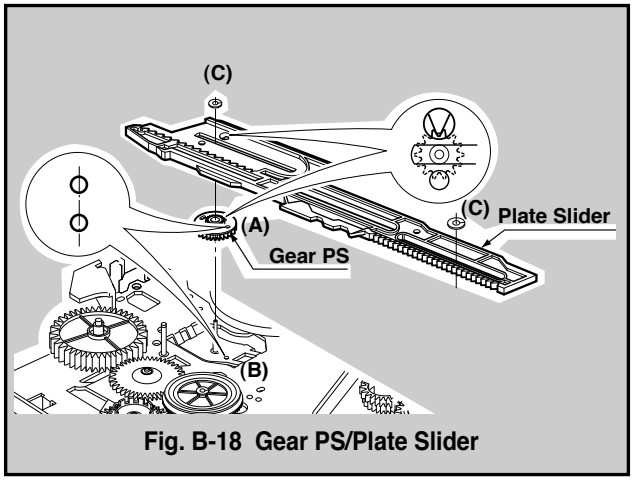


Fig. B-18 Gear PS/Plate Slider

19. Gear Assembly P2/P (Fig. B-19)

1) Remove the Plate Slider.
2) Remove by pushing one hook(B) on the top side of Gear Assembly P3.
3) Remove by pushing one hook(A) on the top side of Gear Assembly P2.

NOTES:

When disassembling and reassembling:
a. The P2 and P3 Gear Assembly should not be interchanged.
b. The groove(⋁),of Gear P2 should be aligned to the groove(⋀⋀) of Gear P3.
c. Set the hole of Lever to the Boss of P2 and P3 Base Assembly.
(When assembling make sure that the Lever is not bent.)

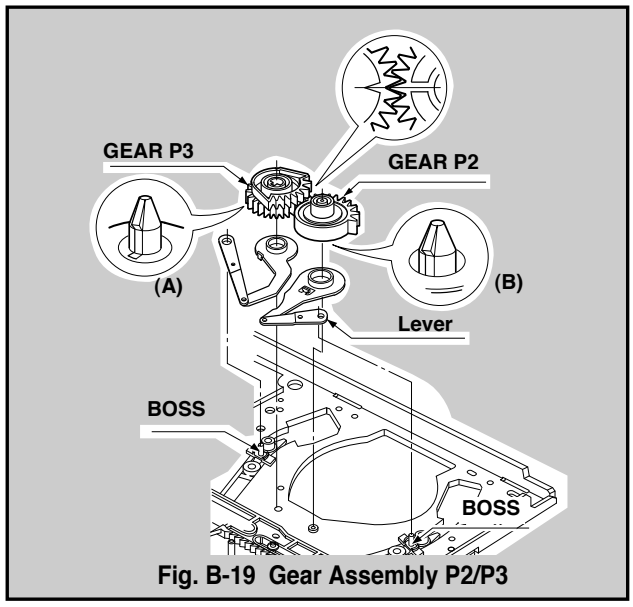


Fig. B-19 Gear Assembly P2/P3

20. Base Assembly P2/P (Fig. B-20)

1) Remove the P2/P3 Gear Assembly.
2) Remove the P2/P3 Base Assembly.

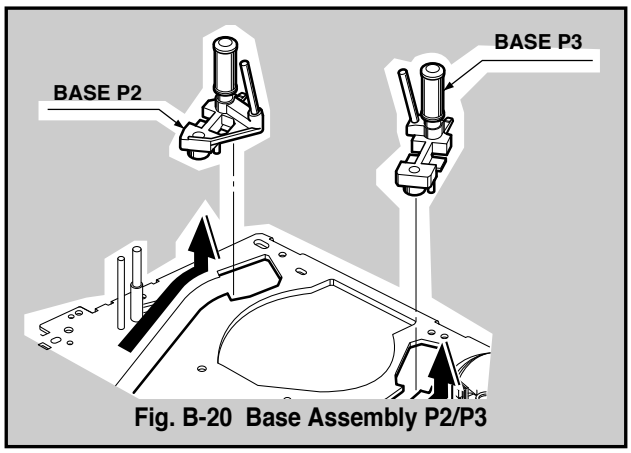


Fig. B-20 Base Assembly P2/P3

DECK MECHANISM DISASSEMBLY

21. Guide Roller Assembly (Fig. B-21)

1) Remove two screws(A).
2) Remove the Guide Roller From the Base P2/P3 by turning it.

NOTE

When disassembling and reassembling:
a. The P2 and P3 Base should not be interchanged.

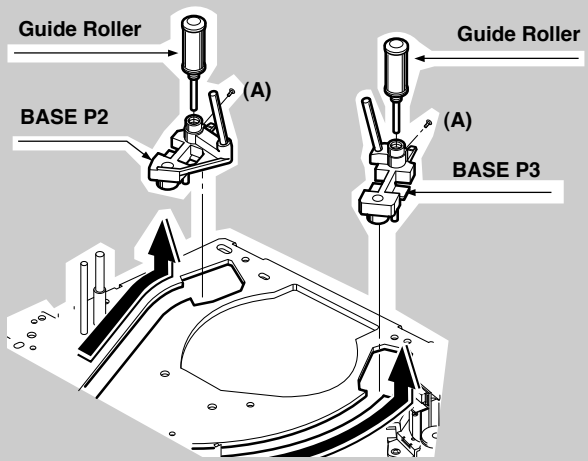


Fig. B-21 Guide Roller Assembly

22. Clutch Assembly S2 (Fig. B-22)

1) Remove the Gear Cam L/D and the Arm Assembly Idler.
2) Remove the washer(A).
3) Remove the Clutch Assembly S27.

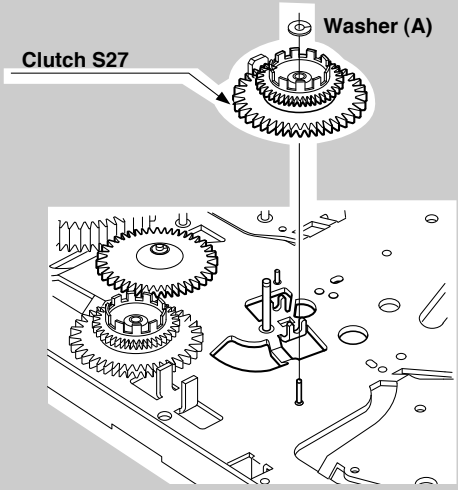


Fig. B-22 Clutch Assembly S27

23. Clutch Assembly T2 (Fig. B-23)

1) Remove the Gear H1 and Arm Assembly Idler.
2) Remove the washer(A).
3) Remove the Clutch Assembly T27.

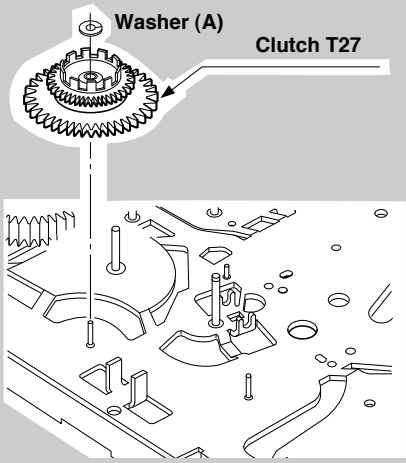


Fig. B-23 Clutch Assembly T27

24. Lever F/R & Arm F/R (Fig. B-24)

1) Remove the Plate Slider.
2) Remove the washer(A).
3) Remove the Lever F/R.
4) Remove the Arm Assembly Idler.
5) Remove the Arm F/R.

NOTE

1) When disassembling the Arm F/R should be horizontal.

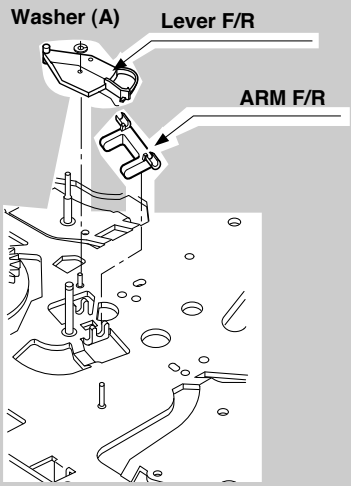


Fig. B-24 Lever F/R & Arm F/R

25. Holder Pinch Assembly (Fig. B-25)

1) Separate the Holder Pinch Assembly by pushing tab(A) on the L/D Motor Bracket in the direction of arrow (B).

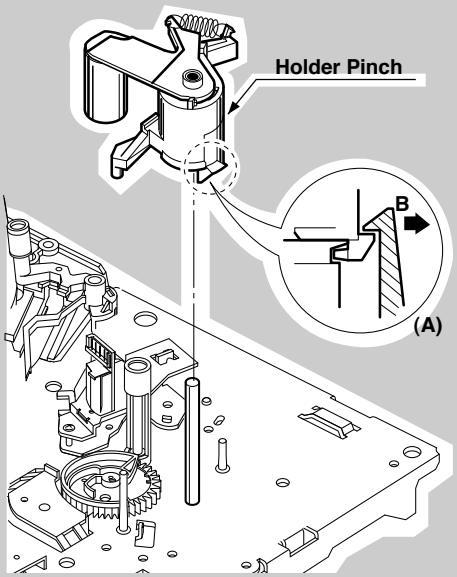


Fig. B-25 Holder Pinch Assembly

26. Pinch Arm Assembly (Fig. B-26)

1) Remove the Spring Pinch.
2) Remove the Pinch Arm Assembly by turning it counterclockwise.

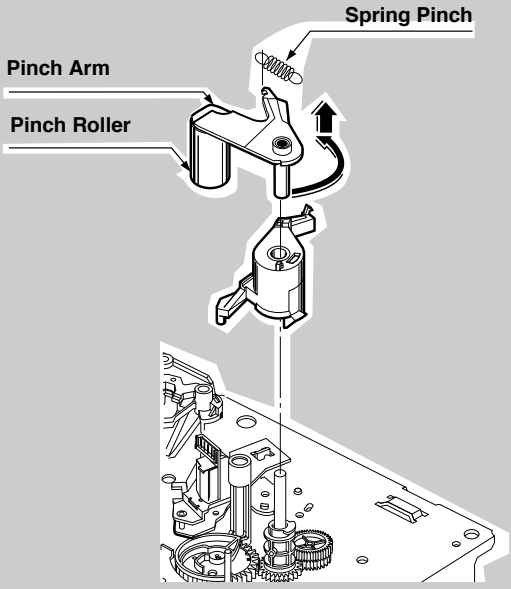


Fig. B-26 Pinch Arm Assembly

27. L/D Motor Bracket Assembly (Fig. B-27)

1) Remove three Screws(A).
2) Push the tabs(A) and remove the L/D Motor Bracket Assembly.

NOTES:

When assembling and disassembling:

a. Make sure Grease from the Gear Pinch does not come in contact with the wing of the L/D Motor Bracket.

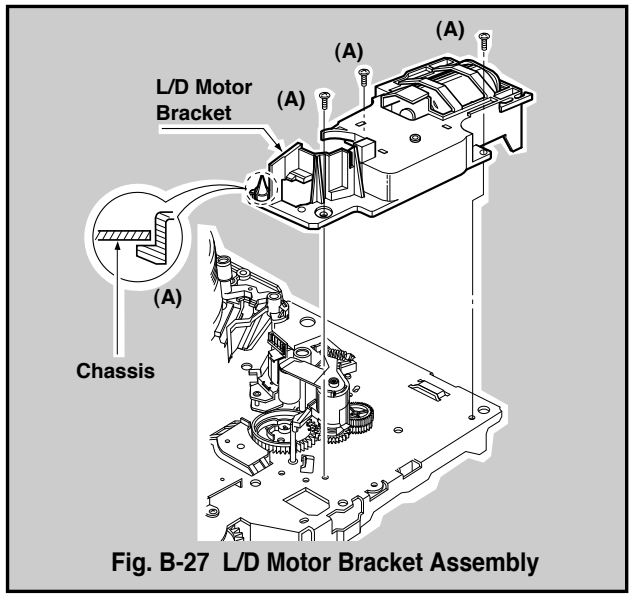


Fig. B-27 L/D Motor Bracket Assembly

28. Worm Wheel (Fig. B-28)

1) Remove the L/D Motor Bracket Assembly.
2) Push two Tabs(A) on the L/D Motor Bracket and then remove it.

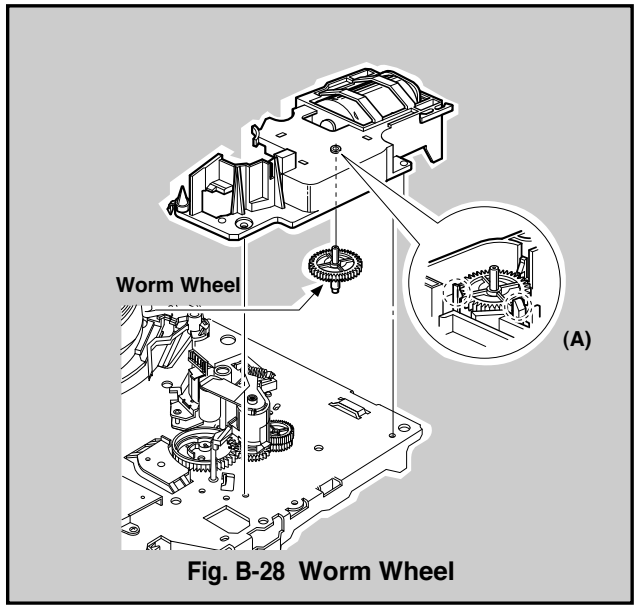


Fig. B-28 Worm Wheel

29. L/D Motor Assembly & Worm L/D Motor & L/D Motor Bracket (Fig. B-29)

1) Remove the L/D Motor Bracket Assembly.
2) Push the L/D Motor Assembly in lower direction and then remove.
3) Remove the Worm L/D Motor from the L/D Motor Assembly in the direction of arrow (A).
4) Remove the L/D Motor Assembly and the Worm L/D Motor and then L/D Motor Bracket is removed.

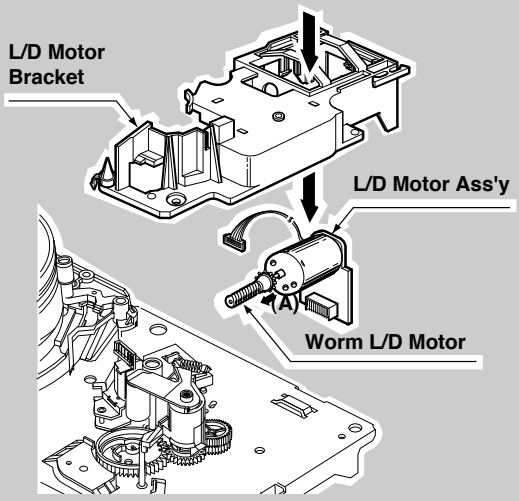


Fig. B-29 L/D Motor Assembly/ Worm L/D Motor/ L/D Motor Bracket

30 . Gear CNT (Fig. B-30)

1) Remove the L/D Motor Bracket Assembly.
2) Remove the Pinch Arm Assembly.
3) Remove the Gear CNT.

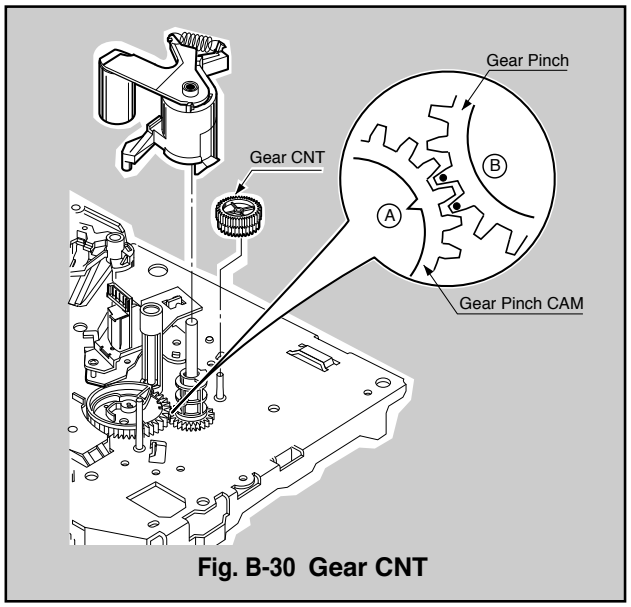


Fig. B-30 Gear CNT

31. Gear Pinch (Fig. B-31)

1) Remove the Pinch Arm Assembly.
2) Remove the Gear CNT.
3) Remove the Gear Pinch.
4) When reassembling, make sure that the two teeth, Gear pinch CAM(£) and Gear pinch(£), with timing marks line up with the arrow at two o'clock on the Pinch Cam Gear. (See Fig on B-30)

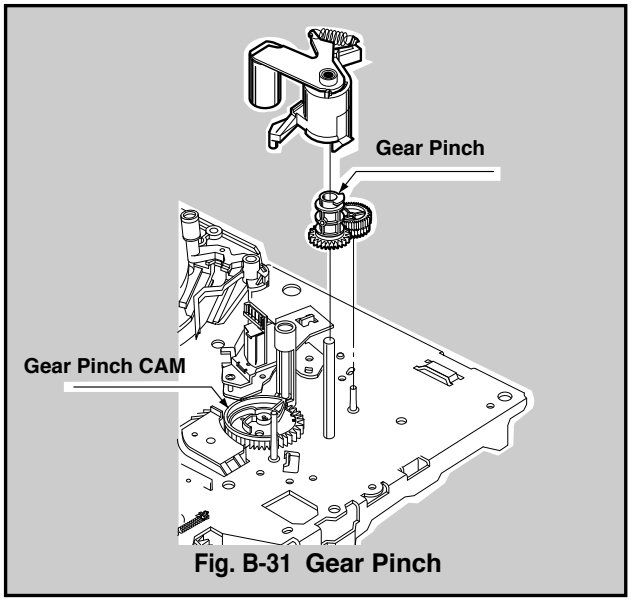


Fig. B-31 Gear Pinch

32. T/Up Arm Assembly (Fig. B-32)

1) Remove the L/D Motor Bracket Assembly.
2) Turn over the T/Up spring and separate the T/Up Arm Assembly.
3) Remove the spring.

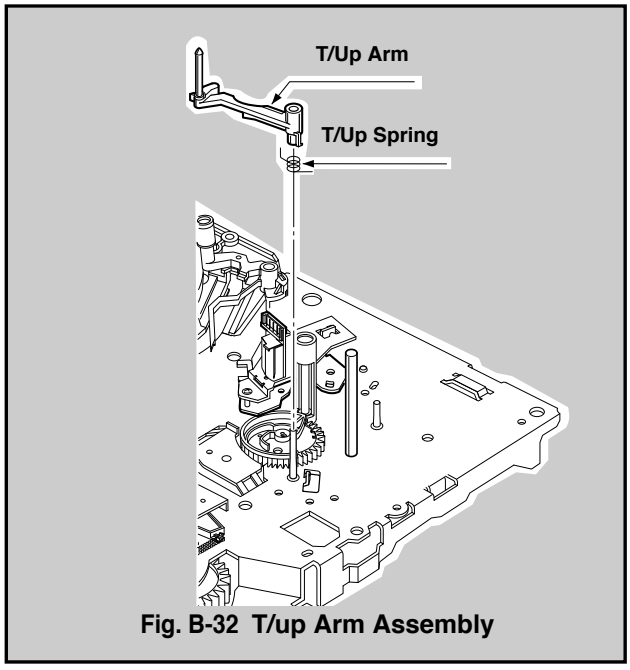


Fig. B-32 T/up Arm Assembly

33. Gear Pinch Cam (Fig. B-33)

1) Remove the T/Up Arm Assembly.
2) Remove by pushing one tab(A) on the bottom side of the Gear Pinch Cam.

NOTE

When disassembling and reassembling:

a. The small hole on the Gear Pinch Cam and hole of chassis should be aligned.

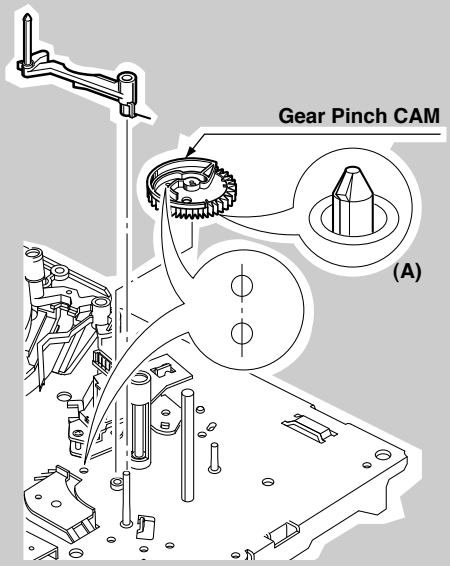
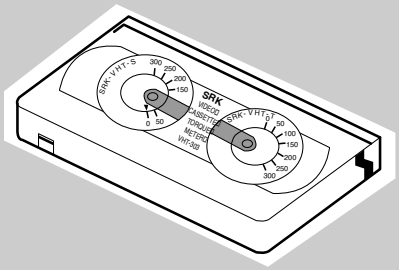
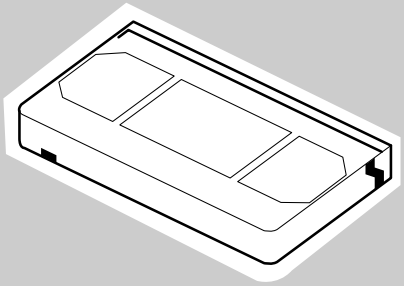
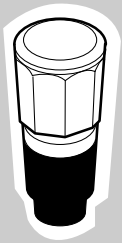
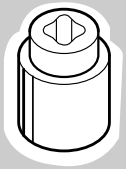
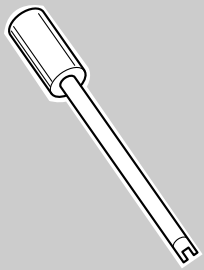
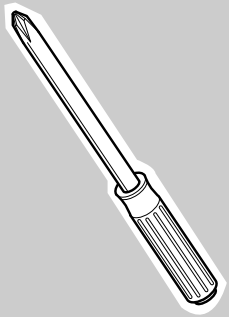


Fig. B-33 Gear Pinch Cam

MECHANISM ADJUSTMENT

¡ Tools and Fixtures for Deck

1. Cassette Torque meter **Parts No: D00-D006** 	**2. Alignment tape** **Parts No NTSC: DTN-0001** **PAL: DTN-0002** 	**3. Torque gauge** **Parts No: D00-D002** 
4. Torque gauge adaptor **Parts No: D09-R001** 	**5. Post height adjusting driver** **Parts No: DTL-0005** 	**6. + Type driver (ø5)** **Obtain locally** 

MECHANISM ADJUSTMENT

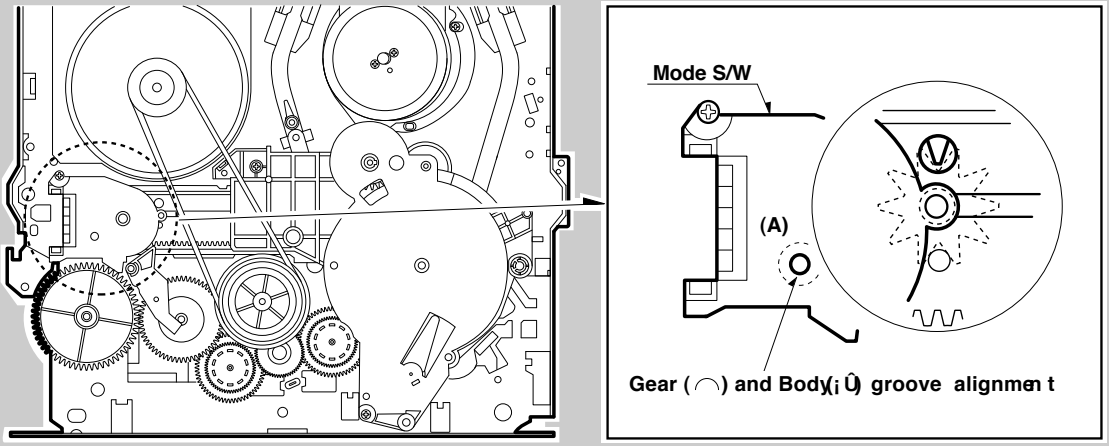
1. Mechanism and Mode Switch Alignment Check

Purpose : To determine if the mode switch and mechanism are in the correct position, when a tape is ejected from the loading mechanism.

Test Equipment / Fixture	Test Conditions VCR (VCP) State	Check Point
* Blank tape	* Eject Mode (with cassette ejected)	* Mechanism and Mode Switch Position

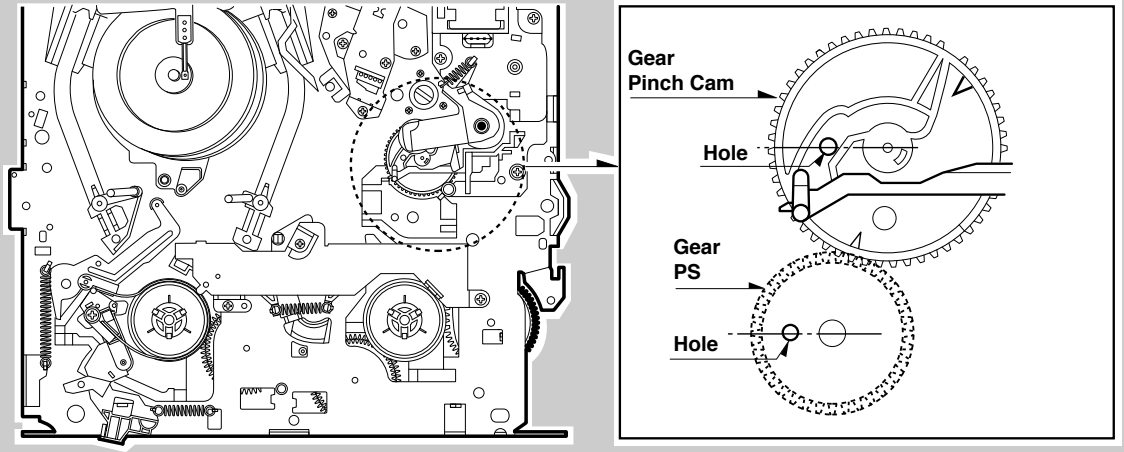
1) Turn power on and eject the cassette by pressing the eject button.
2) Remove the top and bottom covers.
3) Visually check the alignment of the Pinch Cam gear and PS gear holes, line up with holes in the chassis (figure C-2).
4) If the gears in step 3 do not align as indicated, then rotate the shaft of the loading motor to either the clockwise or counterclockwise direction until alignment does occur.
5) Turn the unit over and remove the main P.C.B thus exposing the bottom side of the deck mechanism.
6) Check the alignment of the mode switch as illustrated in figure C-1, (A).
7) If the alignment is incorrect then remove the mode switch and align as shown in figure C-1 with out changing the position of the Pinch Cam gear and PS gear.
8) Remount the mode switch and main P.C.B assembly and check operation.

CHECK DIAGRAM



BOTTOM VIEW

Fig. C-1



TOP VIEW

Fig. C-2

2. Preparation for Adjustment (To set VCR (VCP) to the loading state without inserting a cassette.)

1) Unplug the Power Cord from the AC outlet.
2) Separate the Top Cover and Front Loading Mechanism.
3) Plug the Power Cord into the AC outlet.
4) Turn the VCR on and push the tact switch in the P.C.B. Assembly.
   The VCR can accept inputs for each mode in this case. However the rewind and review operation cannot be performed for more than a few seconds because the take-up reel table is in the stop state and reel pulses cannot be detected.

NOTE

Cover the holes in the end sensors with black tape to prevent a light leak.

NOTES:

Always return the VCR(VCP) to the Front Loading Mechanism Assembly State in the following order after the above operations have been performed.

1) Press the Eject button after turning the power ON.
2) Wait for about 10 seconds until searching out the assembly position.
3) Assemble the Front Loading Mechanism and connect the Front Loading Mechanism Connector.
4) Refer to the "Front Loading Mechanism Disassembly" Section.

3. Tension Post Position and Tension Adjustment

Purpose : To insure uniform tape contact with the video head by maintaining constant tape tension.

Test Equipment / Fixture	Test Conditions VCR(VCP) State	Adjustment Point
* Cassette Torque Meter (For play 100g/cm)	* Position Adjustment: Play without a cassette * Tension Check: Play	* Holder Band B and C

Position Adjustment

1) Remove cassette.
2) Adjust the position of tension post in accordance with figure C-3.

NOTE

Align the Tension Post (2mm) to the hole in the Chassis (2.5mm).

Tension Adjustment

1) Turn on VCR and load the cassette torque meter.
2) Press the play button and observe the torque tension on the supply reel (spec. 37g/cm+5g/cm).
3) If torque is out of spec. then use a Phillips screw driver and move the screw head located in the center of the B and C band hold; to either the right or left until correct torque is indicated.

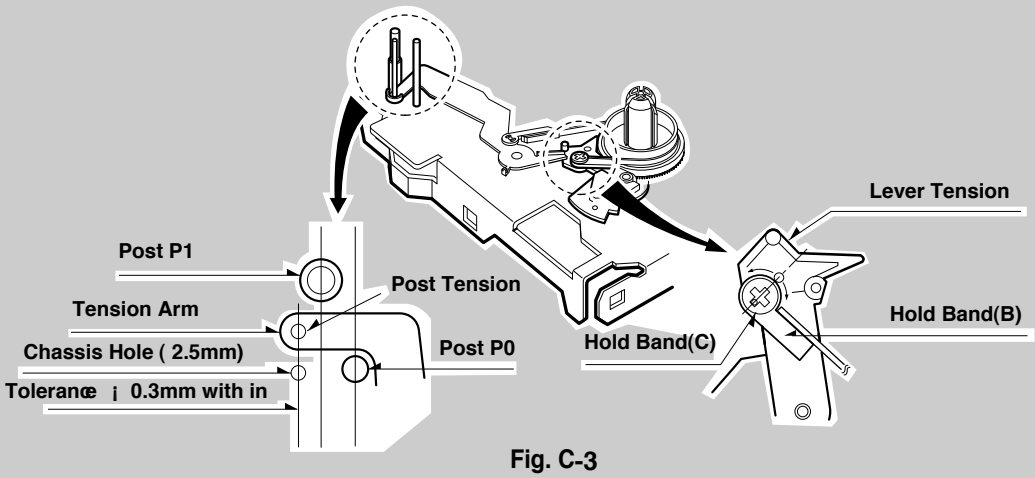


Fig. C-3

4. Checking Torque

Purpose : To insure smooth transport of the tape during each mode of operation. If tape transport is abnormal, then check the torque as indicated by the chart below.

Test Equipment / Fixture	Test Conditions VCR(VCP) State
* Torque Gauge(600 g/cm ATG) * Torque Gauge Adaptor * Cassette Torque Meter V NTSC: 16.67msec PAL: 20msec	* Set the VCR to each operating mode without inserting a cassette. (See '2. Preparation for Adjustment'. Page 4-17)

Item	Mode	Test Equipment	Measurement Reel	Measurement Values
Slack Removal Torque	Unloading	Cassette Torque Meter	Supply Reel	More than 150~270g/cm
Fast Forward Torque	Fast Forward	Cassette Torque Gauge	Take-Up Reel	More than 500g/cm
Rewind Torque	Rewind	Cassette Torque Gauge	Supply Reel	More than 500g/cm
Play Take-Up Torque	Play	Cassette Torque Meter	Take-Up Reel	55~95g/cm
Review Torque	Review	Cassette Torque Meter	Supply Reel	170~250g/cm

Checking Method:
The Values are measured by using a torque gauge and torque gauge adaptor with the torque gauge affixed.

NOTE

The torque reading to measure occurs when the tape abruptly changes direction from fast forward or rewind mode, when quick braking is applied to both reels.

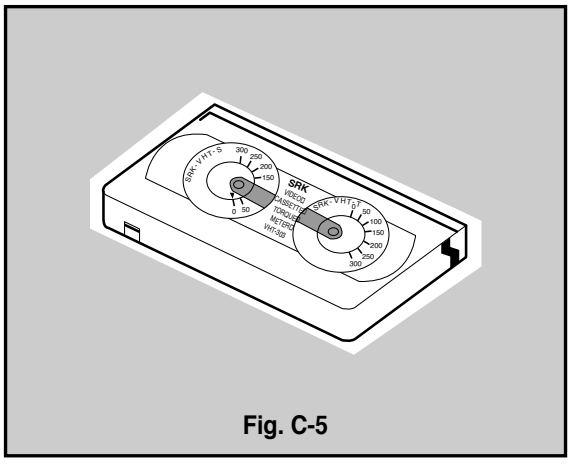


Fig. C-5

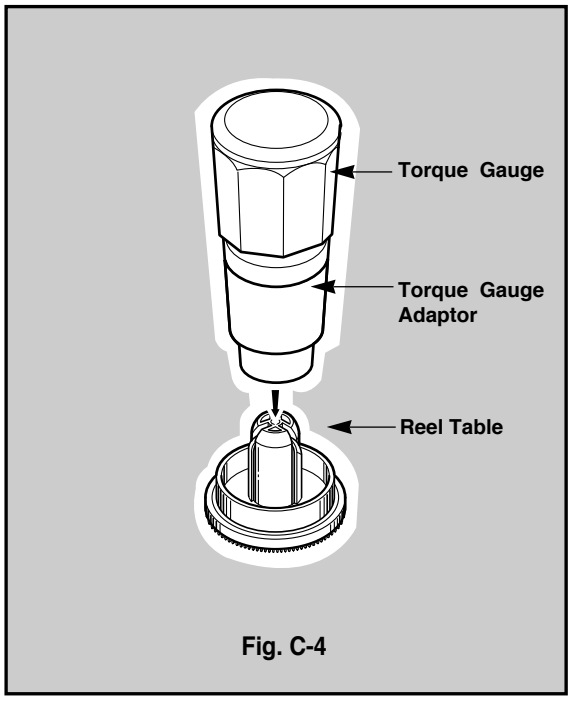


Fig. C-4

MECHANISM ADJUSTMENT

5. Guide Roller Height Adjustment

Purpose : To regulate the height of the tape so that the bottom of the tape runs along the tape guide line on the lower drum.

A. Preliminary Adjustment

Test Equipment / Fixture	Test Conditions VCR(VCP) State	Adjustment Point
* Post Height Adjusting Driver * Hexagonal Wrench or Allen Wrench Phillips screw driver	* Allows a good tape to play normally in spite of a damaged guide roller.	* Guide Roller Height Adjustment screws on the Supply and Take-Up Guide Rollers.

Adjustment Procedure

1) Perform the precise adjustment(See below B).
2) If the Guide Roller is damaged, loosen the Guide Roller retaining screw and replace the Guide Roller.
3) Adjust the height of P2, P3 so that TAPE is adjacent to the guide line.

ADJUSTMENT DIAGRAM

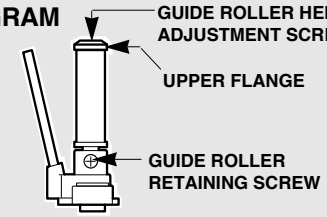


Fig. C-5-1

B. Precise Adjustment

Test Equipment / Fixture	Test Equipment Connection Points	Test Conditions VCR(VCP) State	Adjustment Point
* Oscilloscope * Alignment Tape * Post Height Adjusting Driver	* CH-1: PB RF Envelope * CH-2: NTSC: SW 30Hz PAL : SW 25Hz * Head Switching Output Point * RF Envelope Output Point	* Play an alignment tape	* Guide Roller Height Adjustment Screws.

Adjustment Procedure

1) Play an alignment tape after connecting the probe of the oscilloscope to the RF Envelope Output Test Point and Head Switching Output Test Point.
2) Tracking Control (in PB mode): Center position (When this adjustment is performed after the drum assembly has been replaced, set the tracking control so that the RF output is maximum.)
3) Height adjustment screw: Flatten the RF waveform. (Fig. C-5-2)
4) Turn (Move) the tracking control (in the Playback mode) clockwise and counterclockwise. (Fig. C-5-3))
5) Check that any drop of RF output is uniform at the start and end of the waveform.

CAUTION

If the adjustment is excessive or insufficient the tape will jam or fold.

Waveform Diagrams

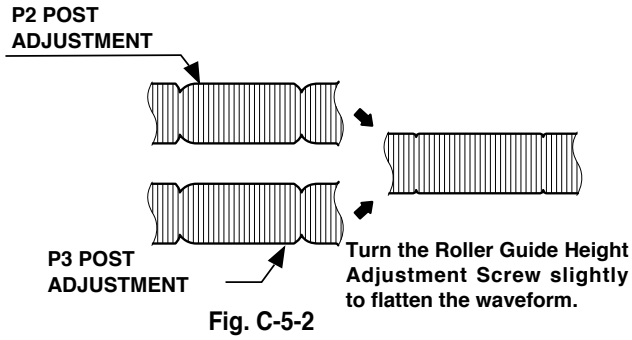


Fig. C-5-2

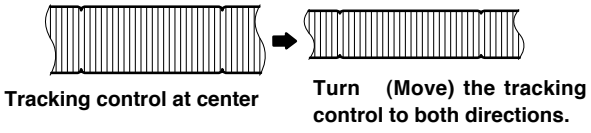
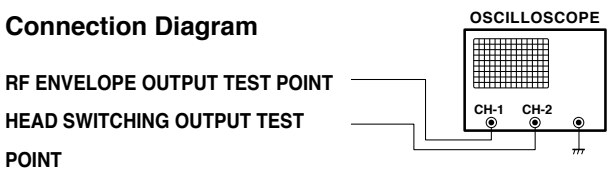


Fig. C-5-3

Connection Diagram



MECHANISM ADJUSTMENT

6. Audio/Control (A/C) Head Adjustment

Purpose : To insure that the tape passes accurately over the audio and control tracks in exact alignment in both the record and playback modes.

A. Preliminary Adjustment (Height and tilt adjustment)
Perform the Preliminary adjustment, when there is no Audio Output signal with a blank tape.

Test Equipment / Fixture	Test Conditions VCR(VCP) State	Adjustment Points
* Blank Tape * Screw Driver(+) Type 5mm	* Play the blank tape (CTL Tape)	* Tilt Adjustment Screw(C) * Height Adjustment Screw(B) * Azimuth Adjustment Screw(A)

Adjustment Procedure / Diagrams

1) Initially adjust the A/C head assembly as shown in figure C-6-1, by using the height adjustment screw(B).
2) Play a blank tape and observe if the tape passes accurately over the A/C head without tape curling or folding.
3) If folding or curling does occur then adjust the Tilt adjusting screw(C) while the tape is running to resemble figure C-6-3.
4) Confirm that the tape passes over the A/C head assembly as indicated by proper audio reproduction and proper tape counter performance.

NOTE

Ideal A/C head height occurs, when the tape runs between 0.2~0.25mm above the bottom edge of the A/C head core.

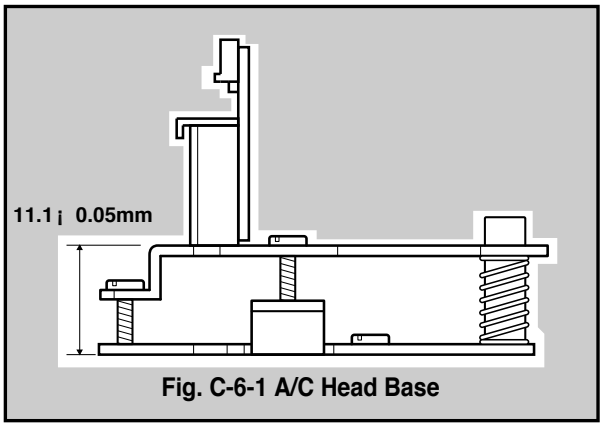


Fig. C-6-1 A/C Head Base

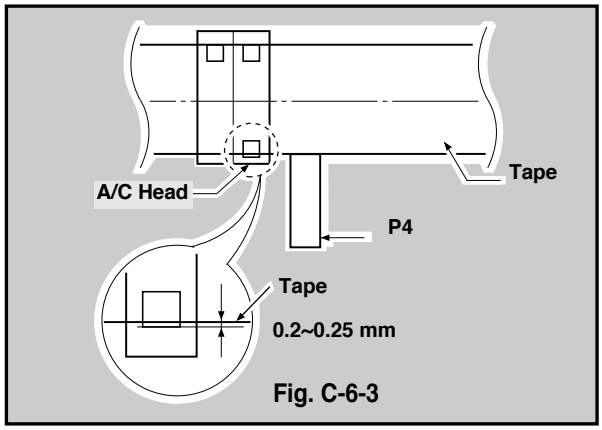


Fig. C-6-3

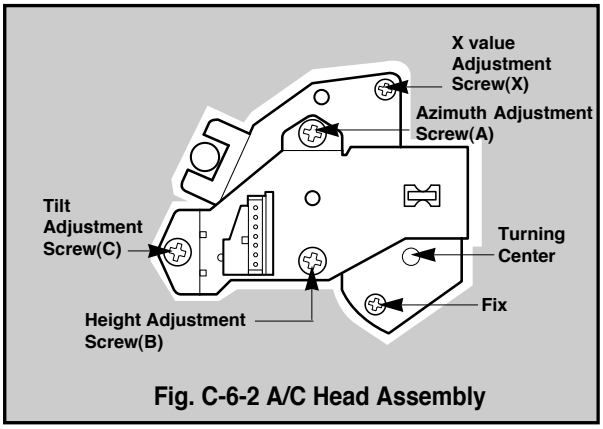


Fig. C-6-2 A/C Head Assembly

B. Confirm that the tape passes smoothly between the T/UP guide and the Pinch Roller (Using a mirror or the naked eye).

1) After completing step A. (Preliminary Adjustment), check that the tape passes around the T/UP post without folding at the top or bottom.
   If folding is observed, due the following:
   a. If folding is observed at the lower part of the T/UP post, then slowly turn the tilt adjustment in the clockwise direction to eliminate tape the curling.
   b. If folding is observed at the upper part of the T/UP post, then slowly turn the tilt adjustment in the counterclockwise direction to eliminate the tape curling.

C. RF Fine Adjustment (only if the RF waveform differs from figure C-5-3).

1) Check the RF Envelope after confirming smooth tape transport path at the T/UP Guide/Pinch Roller.

D. Precise Adjustment (Azimuth adjustment)

Test Equipment / Fixture	Test Equipment Connection Point	Test Conditions VCR (VCP) State	Adjustment Points
* Oscilloscope * Alignment tapes * Screw Driver(+) Type 5mm	* Audio output jack	* Play an alignment tape 1KHz, 7KHz sections.	* Azimuth Adjustment Screw(A) * Tilt Adjustment Screw(C)

Adjustment Procedure

1) Connect the probe of oscilloscope to Audio Output Jack.
2) Alternately adjust the Azimuth adjustment screw(A) and the Tilt adjustment screw(C) for maximum output of the 1KHz and 7KHz segments, while maintaining the flattest envelope differential between the two frequencies.

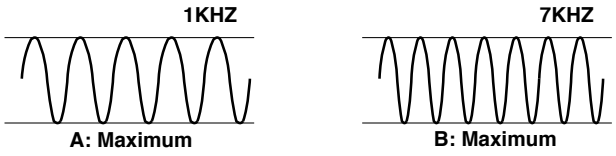
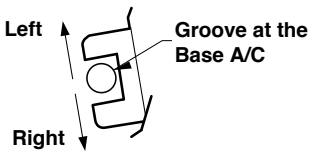


Fig. C-6-4

7. X-Value Adjustment

Purpose : To obtain compatibility with other VCR(VCP).

Test Equipment / Fixture	Test Equipment Connection Point	Test Conditions VCR (VCP) State	Adjustment diagrams
* Oscilloscope * Alignment tapes * Screw Driver(+) Type 5mm * Post Height Adjusting Driver	* CH-1: PB RF Envelope * CH-2: NTSC: SW 30Hz PAL : SW 25Hz * Head Switching Output Test Point * RF Envelope Output Test Point	* Play an alignment tape	

Adjustment Procedure

1) Loosen the fixed mounting and X Value adjustment screw.
2) Allow the mechanism to run long enough for auto tracking to complete it's cycle.
3) Move the A/C base laterally in the direction as shown in the diagram to find the center of the peak that allows for the maximum waveform envelope. This method should allow the 30um head to be centrally located over the 60um tape track.
4) Tighten the A/C head assembly mounting screws.

Adjustment Diagram

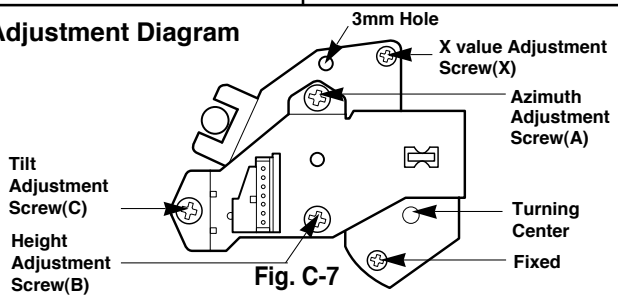
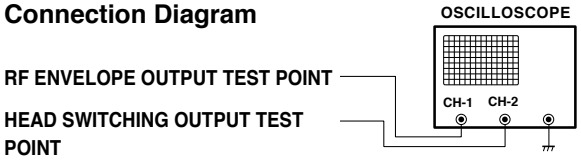


Fig. C-7

Connection Diagram



MECHANISM ADJUSTMENT

8. Adjustment after Replacing Drum Assembly (Video Heads)

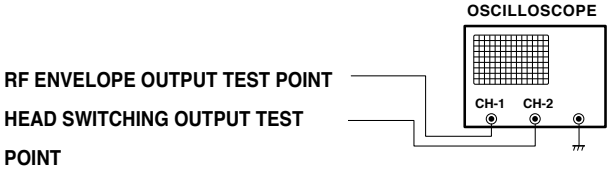
Purpose : To correct for shift in the roller guide and X value after replacing the drum.

Test Equipment / Fixture	Test Equipment Connection Points	Test Conditions VCR (VCP) State	Adjustment Points
* Oscilloscope * Alignment tape * Blank Tape * Post Height Adjusting Driver * Screw Driver(+) Type 5mm	* CH-1: PB RF Envelope * CH-2: NTSC: SW 30Hz PAL : SW 25Hz * Head Switching Output Test Point * RF Envelope Output Test Point	* Play the blank tape * Play an alignment tape	* Guide Roller Precise Adjustment * Switching Point * Tracking Preset * X-Value

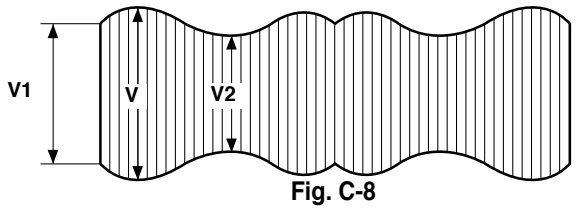
Checking/Adjustment Procedure

Play a blank tape and check for tape curling or creasing around the roller guide. If there is a problem then follow the procedure 5. "Guide Roller Height" and 6. "Audio Control(A/C) Head Adjustment".

Connection Diagram



Waveform



V1/V MAX §[0.7
V2/V MAX §[0.8
RF ENVELOPE OUTPUT POINT

Fig. C-8

9. Check the Tape Travel after Reassembling Deck Assembly.

9-1. Check Audio and RF Locking Time during playback and after CUE or REV (FF/REW)

Test Equipment / Fixture	Specification	Test Equipment Connection Points	Test Conditions VCR (VCP) State
* Oscilloscope * Alignment tape (with 6H 3kHz Color Bar Signal) * Stop Watch	* RF Locking Time: Less than 5 sec. * Audio Locking Time: Less than 10 sec.	* CH-1: PB RF Envelope * CH-2: Audio Output * RF Envelope Output Point * Audio Output Jack	* Play an alignment tape (with 6H 3kHz Color Bar Signal)

Checking Procedure

Play an alignment tape then change the operating mode to CUE or REV and confirm if the unit meets the above listed specifications.

NOTES:

1) CUE is fast forward mode (FF)
2) REV is the rewind mode (REW)
3) Referenced to the Play mode

9-2. Check the condition between the Audio and Video Sync. (Lip Sync.)

Test Equipment / Fixture	Specification	Test Equipment Connection Points	Test Conditions VCR(VCP) State
* Oscilloscope * Alignment Tape	* Less than¡ ¾V	* CH-1: PB RF Envelope * CH-2: Audio Output * RF Envelope Output Point * Audio Output Jack	* Play an alignment tape

Checking Procedure

1) Confirm that the period ¨Í in Fig. C-9-1 is within ¡¾V.
2) If the result is abnormal, repeat adjustment #7. (X-Value adjustment)

V ┌ NTSC: 16.67msec
V └ PAL: 20msec

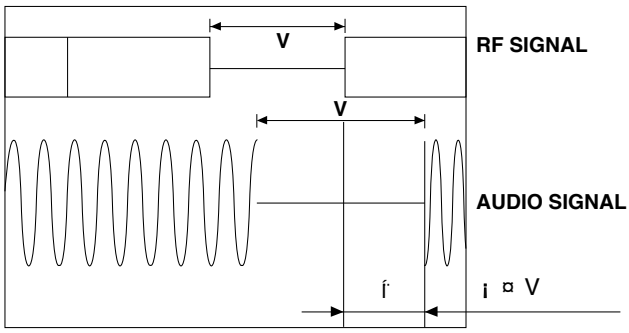


Fig. C-9-1

9-3. Check for tape curling or jamming

Test Equipment / Fixture	Specification	VCR(VCP) State
* T-160 Tape * T-120 Tape	* Be sure there is no tape jamming or curling at the begining, middle or end of a T-160 tape.	* Run the CUE, REV play mode at the beginning and the end of the tape.

Checking Procedure

1) Confirm that the tape runs smoothly around the roller guides, drum and A/C head assemblies while abruptly changing operating modes from Play to CUE or REV. This is to be checked at the begining, middle and end sections of the cassette.
2) Confirm that the tape passes over the A/C head assembly as indicated by proper audio reproduction and proper tape counter performance.

10. Maintenance/Inspection Procedure

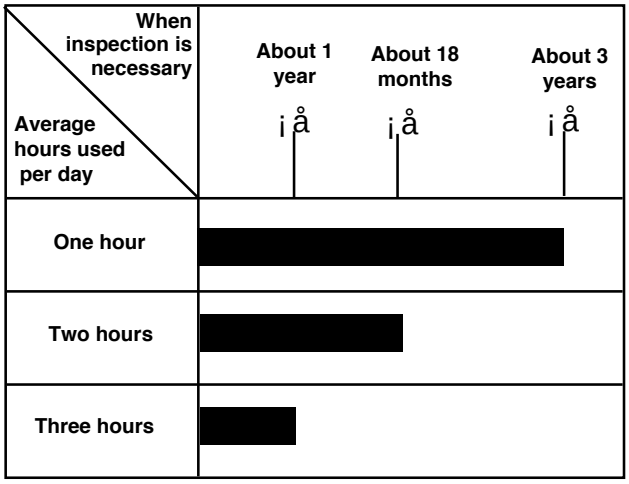
1) Required Maintenance

The recording density of a VCR(VCP) is much higher than that of an audio tape recorder. VCR(VCP) components must be very precise, at tolerances of 1/1000mm, to ensure compatiblity with other VCRs. If any of these components are worn or dirty, the symptoms will be the same as if the part is defective. To ensure a good picture, periodic inspection and maintenance, including replacement of worn out parts and lubrication, is necessary.

2) Scheduled Maintenance

Schedules for maintenance and inspection are not fixed because they vary greatly according to the way in which the customer uses the VCR(VCP), and the environment in which the VCR(VCP) is used.
But, in general home use, a good picture will be maintained if inspection and maintenance is made every 1,000 hours. The table below shows the relation between time used and inspection period.

Table 1



3) Check before starting repairs

The following faults can be remedied by cleaning and oiling. Check the needed lubrication and the conditions of cleanliness in the unit.
Check with the customer to find out how often the unit is used, and then determine that the unit is ready for in spection and maintenance. Check the following parts.

Tabel 2

Phenomenon	Inspection
Poor S/N, no color	Dirt on video head or worn video head
Tape does not run or tape is slack	Dirt on pinch roller, belt or flywheel belt
Vertical jitter, horizontal jitter	Dirt on video head or in tape transport system
Color beats	Dirt on full-erase head
Low volume or distorted audio	Dirt on audio/control head
No Fast forward or rewind or rotation is slow	Dirt on belt

4) Supplies Required for Inspection and Maintenance

(1) Grease Kanto G-311G or equivalent
(2) Isopropyl Alcohol or equivalent
(3) Cleaning Patches

5) Maintenance Procedure
5-1) Cleaning

(1) Cleaning video head
First use a cleaning tape. If the dirt on the head is too stubborn to remove by tape, use the cleaning patch. Coat the cleaning patch with Isopropyl Alcohol. Touch the cleaning patch to the head tip and gently turn the head(rotating cylinder) right and left.
(Do not move the cleaning patch vertically. Make sure that only the buckskin on the cleaning patch comes into contact with the head. Otherwise, the head may be damaged.)
Thoroughly dry the head. Then run the test tape. If Isopropyl Alcohol remains on the video head, the tape may be damaged when it comes into contact with the head surface.
(2) Clean the tape transport system and drive system, etc, by wiping with a cleaning patch wetted with Isporopyl Alcohol.

NOTES:

a. It is the tape transport system which comes into contact with the running tape. The drive system consists of those parts which moves the tape.
b. Make sure that during cleaning you do not touch the tape transport system with the tip of a screw driver and no that force is that would cause deforming or damage applied to the system.

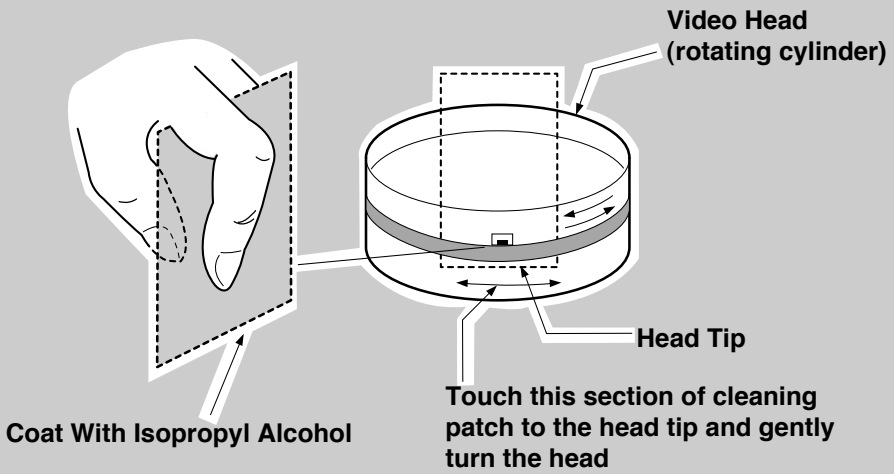

Video Head
(rotating cylinder)
Head Tip
Touch this section of cleaning patch to the head tip and gently turn the head
Coat With Isopropyl Alcohol

Fig. C-10-1

5-2) Greasing

(1) Greasing guidelines
Apply grease, with a cleaning patch. Do not use excess grease. It may come into contact with the tape transport or drive system. Wipe any excess and clean with cleaning patch wetted in Isopropyl Alcohol.

(2) Periodic greasing
Grease specified locations every 5,000 hours.

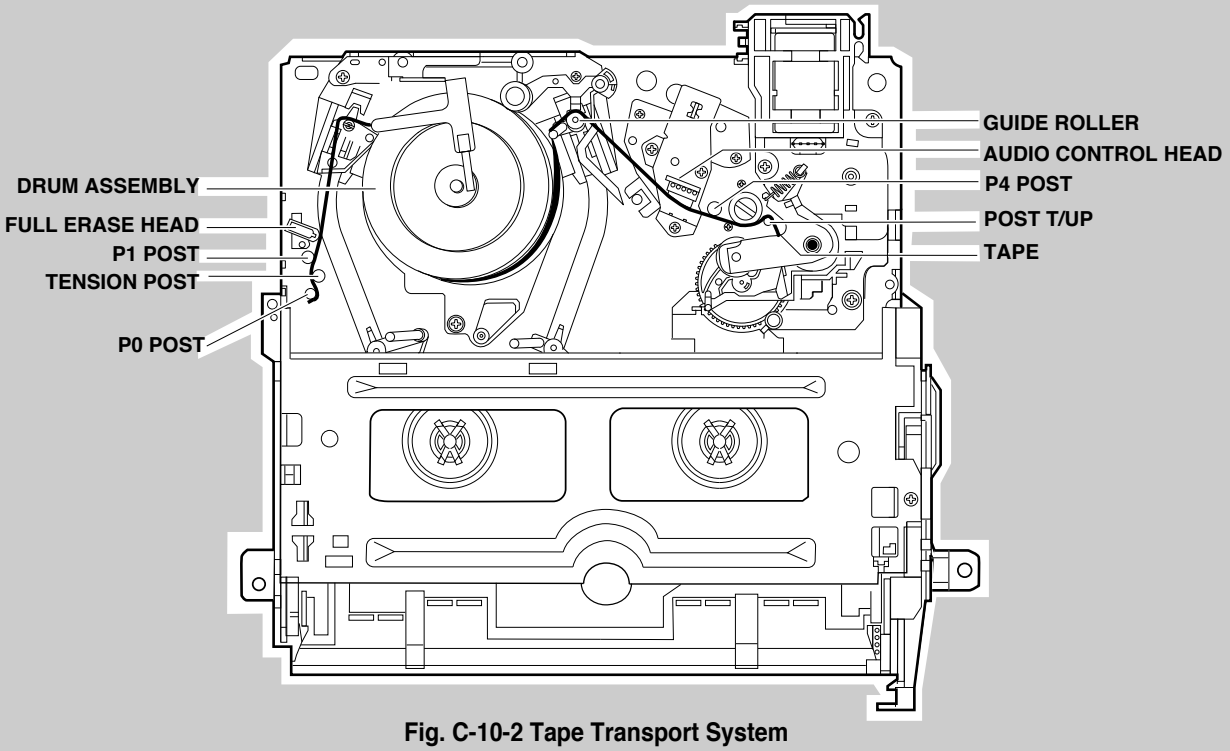


Fig. C-10-2 Tape Transport System

MECHANISM ADJUSTMENT

Phenomenon	Inspection	Replace-ment
Color beats	Dirt on full-erase head	¡Û → ¨ç
Poor S/N no color	Dirt on video head	¡Û → ¨è
Vertical jitter	Dirt on video head Dirt on tape transport system	¡Û → ¨é
Low volume Sound distorted	Dirt on audio/control head	¡Û → ¨ê
Tape does not run. Tape is slack.	Dirt on pinch roller	¡Û → ¨ë

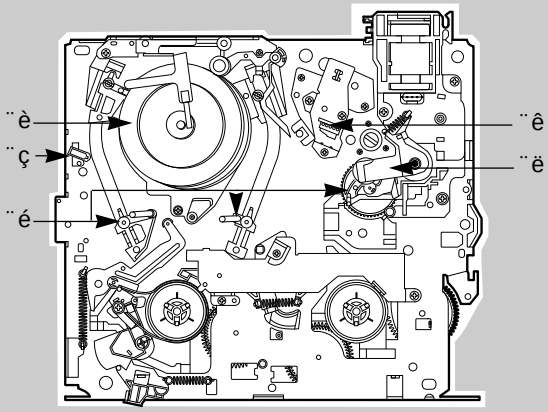


Fig. C-10-3 Top VIEW

Phenomenon	Inspection	Replace-ment
* No fast forward or rewind, or rotation is slow * Tape does not run * Slack tape	Dirt on reel belt	¡Û → ¨ì
In Review and Unloading (off mode), the Tape is rolled up loosely.	Clutch Ass'y S27 Torque reduced Cleaning Drum and transport system	¡Û → ¨í

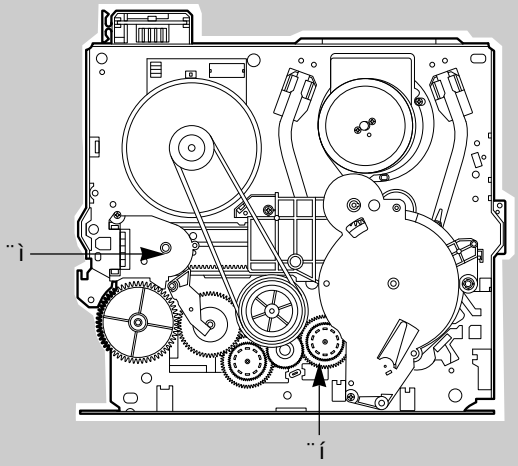


Fig. C-10-4 BOTTOM VIEW

Note

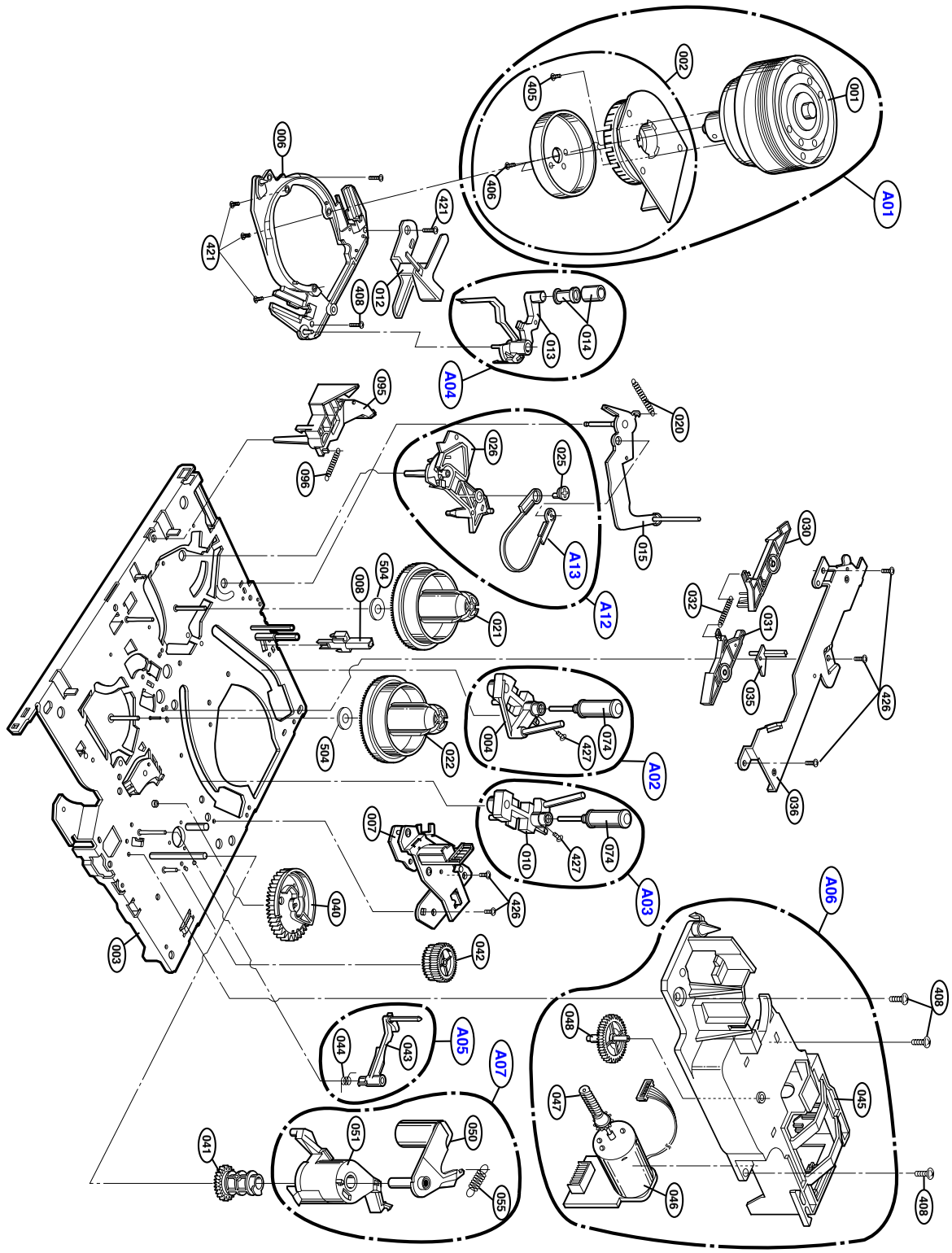
If locations marked with ¡Ûdo not operate normally after cleaning, check for wear and replace.
See the EXPLODED VIEWS at the end of this manual as well as the above illustrations for the sections to be lubricated and greased.

EXPLODED VIEW

1. Moving Mechanism Section (1)

(Top View)

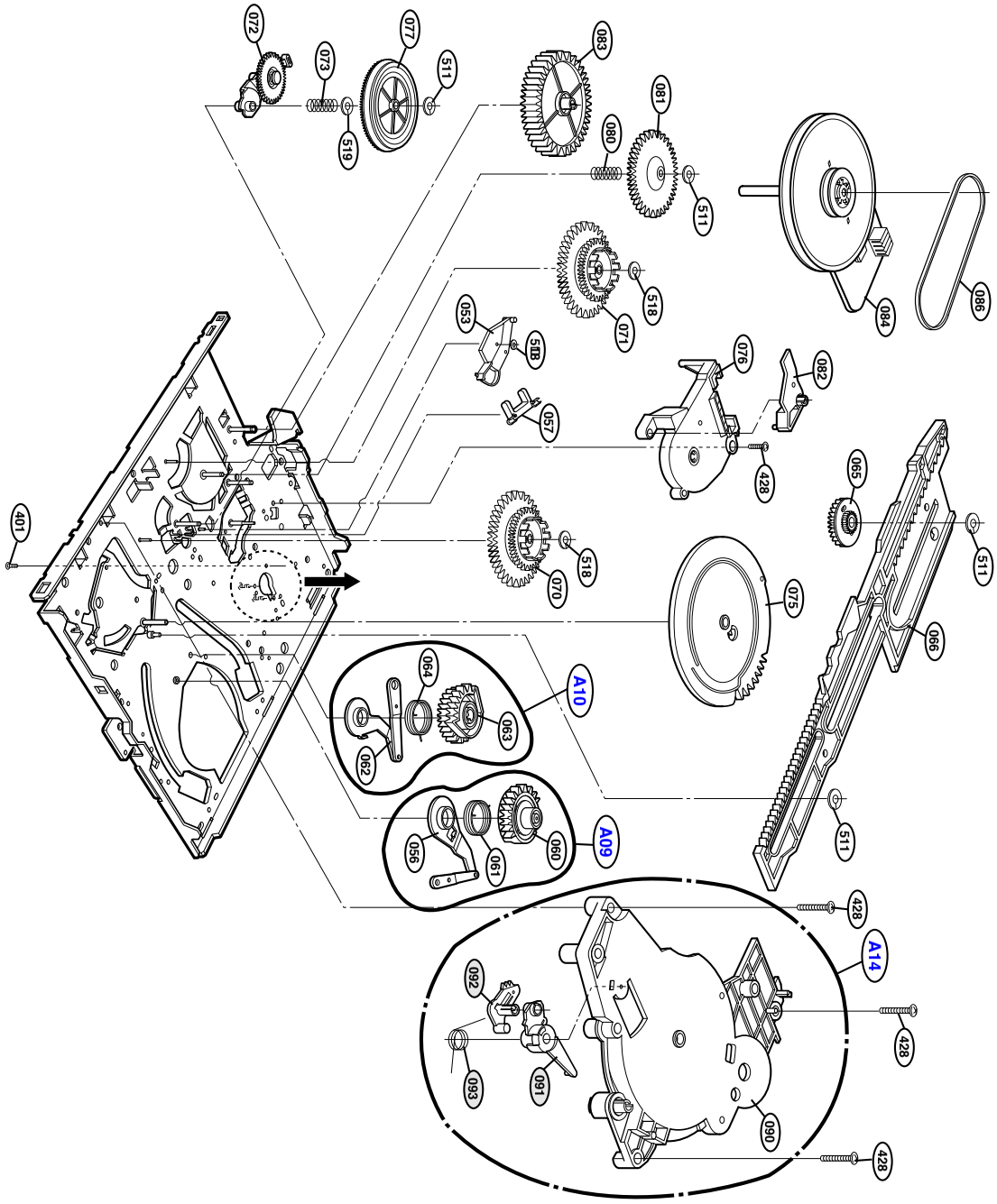
NOTE) ⬭ marks the optional parts only in VCR (Video Cassette Recorder) Models.



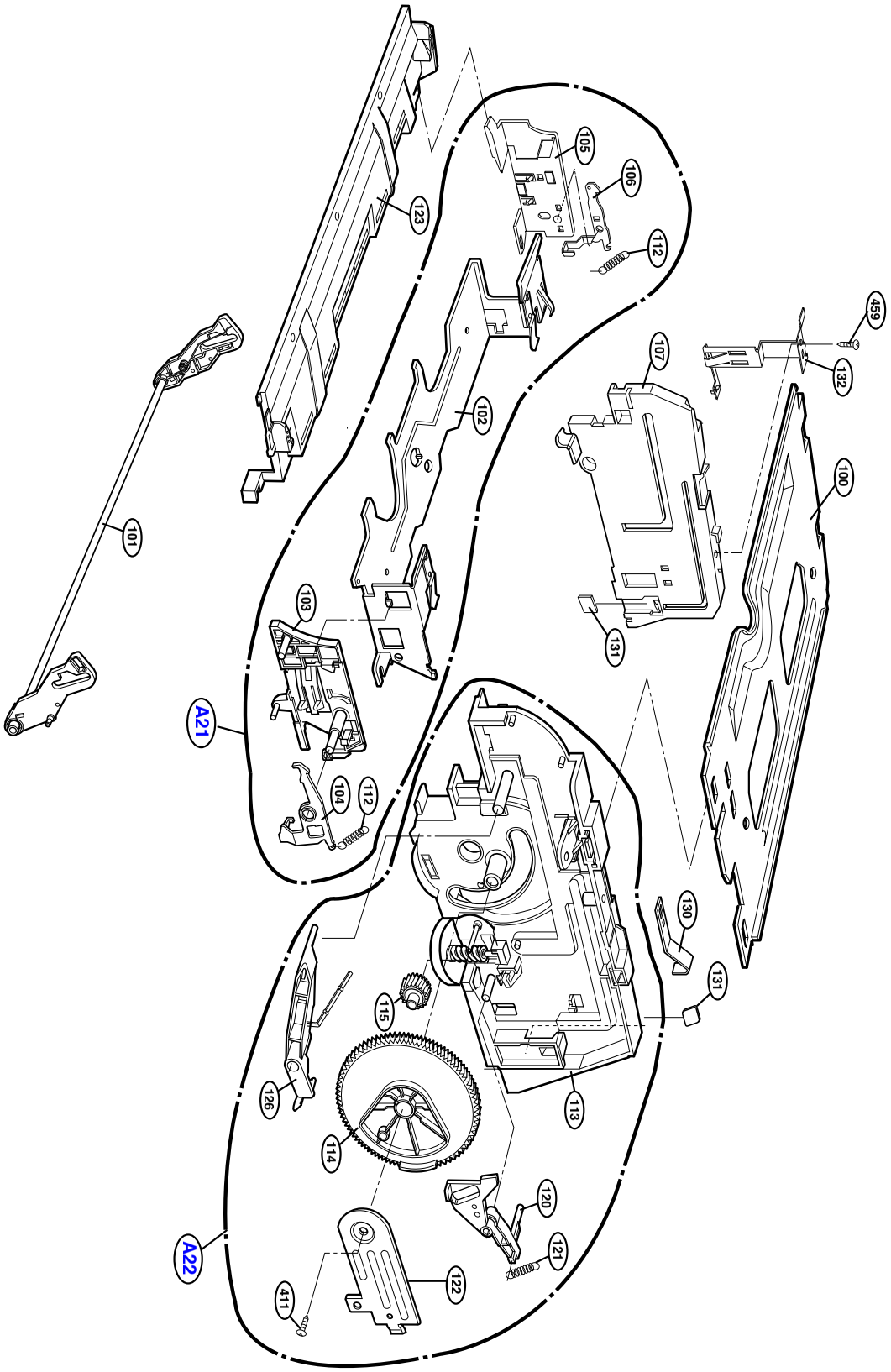
2. Moving Mechanism Section (2)

(Bottom View)

NOTE) 000 is the additional parts of the VCR (Video Cassette Recoder) Models.



3. Front Loading Mechanism Section



REPLACEMENT PARTS LIST

1. Mechanical Section

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
				ASSEMBLY PARTS SECTION		
		A00	412-172B	DECK	ASSY D-27 N (4HD MONO VCR)	
		A01	6723R-0025A	DRUM	ASSY (D-27 N4S)	
		A02	225-361A	BASE	ASSY P2	
		A03	225-364A	BASE	ASSY P3	
		A04	386-394A	ARM	ASSY CLEANER	
		A05	386-405A	ARM	ASSY T/UP	
		A06	4811R-0004A	BRACKET	ASSY L/D MOTOR	
		A07	340-070A	HOLDER	ASSY PINCH	
		A08	333-331A	LEVER	ASSY F/R	
		A09	435-435A	GEAR	ASSY P2	
		A10	435-437A	GEAR	ASSY P3	
		A12	333-329A	LEVER	ASSY TENSION	
		A13	328-075A	BAND	ASSY TENSION	NSP
		A20	219-023A	HOUSING	ASSY-D27	
		A21	340-010A	HOLDER	ASSY CST	
		A22	321-672A	BRACKET	ASSY SIDE(R)	
				PARTS SECTION		
		001	6723R-0024A	DRUM	SUB ASSY (4HD)	
		002	414-209B	MOTOR	ASSY DRUM GVD-027A ALPS	
		003	311-011A	CHASSIS ASSY	D27	NSP
		004	225-362A	BASE	SUB ASSY P2	NSP
		006	225-368A	BASE	DRUM	
		007	225-371A	BASE	ASSY A/C	
		008	523-833A	HEAD	FE HVFHU0010AK ALPS	
		010	225-365A	BASE	SUB ASSY P3	NSP
		012	225-399A	BASE	ASSY BRUSH	
		013	386-395A	ARM	CLEANER	NSP
		014	324-835B	HOLDER	ASSY CLEANER	NSP
		015	386-392A	ARM	ASSY TENSION	
		020	442-640A	SPRING	TENSION	
		021	456-070A	REEL	S27	
		022	456-071A	REEL	T27	
		025	340-008A	HOLDER	BAND(C)	NSP
		026	333-330A	LEVER	TENSION	NSP
		030	338-112A	BRAKE	ASSY SM	
		031	338-114A	BRAKE	ASSY TM	
		032	442-655A	SPRING	MB	
		033	338-116A	BRAKE	ASSY TS	
		034	442-654A	SPRING	TSB	
		035	316-019A	BODY	PRISM LED	
		036	257-071A	PLATE	UP	
		040	435-441A	GEAR	PINCH CAM	
		041	435-440A	GEAR	PINCH	
		042	435-439A	GEAR	CNT	
		043	386-404A	ARM	SUB ASSY T/UP	
		044	442-650A	SPRING	T/UP	NSP
		045	321-669A	BRACKET	L/D MOTOR	

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		046	414-199B	MOTOR	ASSY L/D	
		047	4422R-0001A	WORM	L/D MOTOR	
		048	437-020A	WORM	WHEEL	
		050	386-401A	ARM	ASSY PINCH	
		051	340-073A	HOLDER	SUB ASSY PINCH	
		052	225-374A	BASE	TENSION	
		053	333-332A	LEVER	F/R	NSP
		054	442-645A	SPRING	F/R	NSP
		055	442-649A	SPRING	PINCH	NSP
		056	333-334A	LEVER	ASSY P2	NSP
		057	386-398A	ARM	F/R	
		060	435-436A	GEAR	P2	NSP
		061	442-647A	SPRING	P2	NSP
		062	333-336A	LEVER	ASSY P3	NSP
		063	435-438A	GEAR	P3	NSP
		064	442-648A	SPRING	P3	NSP
		065	435-442A	GEAR	P/S	
		066	257-070A	PLATE	SLIDER	
		070	337-007B	CLUTCH	ASSY S27	
		071	337-008A	CLUTCH	ASSY T27	
		072	386-396A	ARM	ASSY IDLER	
		073	442-644A	SPRING	UP/D	
		074	434-173A	ROLLER	ASSY GUIDE	
		074	434-173C	ROLLER	ASSY GUIDE	
		075	435-433A	GEAR	CAM L/D	
		076	556-252B	SWITCH	MODE S/W(D27), HMU0840-01, HOSI	
	OR	077	435-432A	GEAR	PULLEY	
		080	442-656A	SPRING	H1	
		081	435-443A	GEAR	H1	
		082	333-339A	LEVER	H1	
		083	435-444A	GEAR	H-2	
		084	414-201A	MOTOR	GVC-027A CAPSTAN D-27 ALPS	
		085	321-696A	BRACKET	CAPSATN, D27	
		086	452-062A	BELT	CAPSTAN	
		090	321-670A	BRACKET	CAM	
		091	333-333A	LEVER	JOG	
		092	435-434A	GEAR	JOG	
		093	442-646A	SPRING	JOG	
		094	338-110A	BRAKE	ASSY CAP	
		095	333-338A	LEVER	TAB	NSP
		096	442-652A	SPRING	TAB	
		100	257-072A	PLATE	TOP	
		101	386-407A	ARM	ASSY F/L	
		102	340-011A	HOLDER	SUB ASSY CST	NSP
		103	321-671A	BRACKET	HOLDER(R)	NSP
		104	333-341A	LEVER	STOPPER(R)	NSP
		105	465-039A	OPENER	LID	NSP
		106	386-410A	ARM	RELEASE	NSP
		110	442-660A	SPRING	RELEASE	
		111	442-659A	SPRING	STOPPER	
		112	477-058A	RUBBER	GRIP	NSP
		113	321-673A	BRACKET	SUB ASSY(R)	NSP
		114	435-445A	GEAR	CAM F/L	NSP
		115	435-446A	GEAR	CONNECT	NSP
		116	435-447A	GEAR	WORM	NSP

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		120	333-342A	LEVER	SWITCH	NSP
		121	442-661A	SPRING	SWITCH	NSP
		122	257-074A	PLATE	COVER	NSP
		123	384-143A	GUIDE	CST	
		123	384-151A	GUIDE	CST27	
		126	465-040A	OPENER	DOOR	NSP
	OR	130	257-075A	PLATE	GROUND	NSP
		131	340-062A	HOLDER	ASSY PRISM	
				SCREW		
		401	1MPK0261418	PAN HEAD MACHINE SCREW +, -	D2.6 L4.0 MSWR3/FZY	
		405	1MDC0262818	PAN HEAD MACHINE SCREW P/WASH+	D2.6 L12 MSWR3/FZY	
		406	1MEC0302018	PAN HEAD MACHINE SCREW S/W+	D3.0 L6.0 MSWR3/FZY	
		408	1MBC0302418	BINDING HEAD MACHINE SCREW +	D3.0 L8.0 MSWR3/FZY	
		411	353-046B	SCREW	SPECIAL (3X8 FZMY)	NSP
		421	1MPC0302618	PAN HEAD MACHINE SCREW +!	D3.0 L10.0, MSWR3/FZY	
		426	1MPC0302018	PAN HEAD MACHINE SCREW +!	D3.0 L6.0 MSWR3/FZY	
		427	353-054B	SCREW	MINIATURE	
		428	353-221A	SCREW	M3-L15	
				NUT, WASHER		
		500	354-080F	WASHER	STOPPER	
		504	354-001B	WASHER	P.S D3.1XD6X0.5T	
		511	354-080C	WASHER	STOPPER D2.6XD5X0.5T	
		518	354-128A	WASHER	STOPPER D1.7XD4.5X0.5T	
		519	354-128B	WASHER	STOPPER D2.5XD9X0.5T	